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ABSTRACT

This teacher's guide provides materials and suggestions for including archaeology in the classroom as a way to develop interdisciplinary lessons and excite curiosity in students. Archaeology can be used to build knowledge and skills in a number of subject areas. The booklet is divided into the following sections: (1) Introduction; (2) "What is Archaeology?"; (3) "More than Meets the Eye"; (4) "Tracing the Foot Steps of an Archaeologist"; (5) Suggested Readings; (6) Resource Material; (7) Speakers Directory; and (8) Share Your Activity Ideas. Activities deal with archival research, survey, chronology, artifacts, observation and inference, and preservation. (EH)

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TEACHER'S GUIDE

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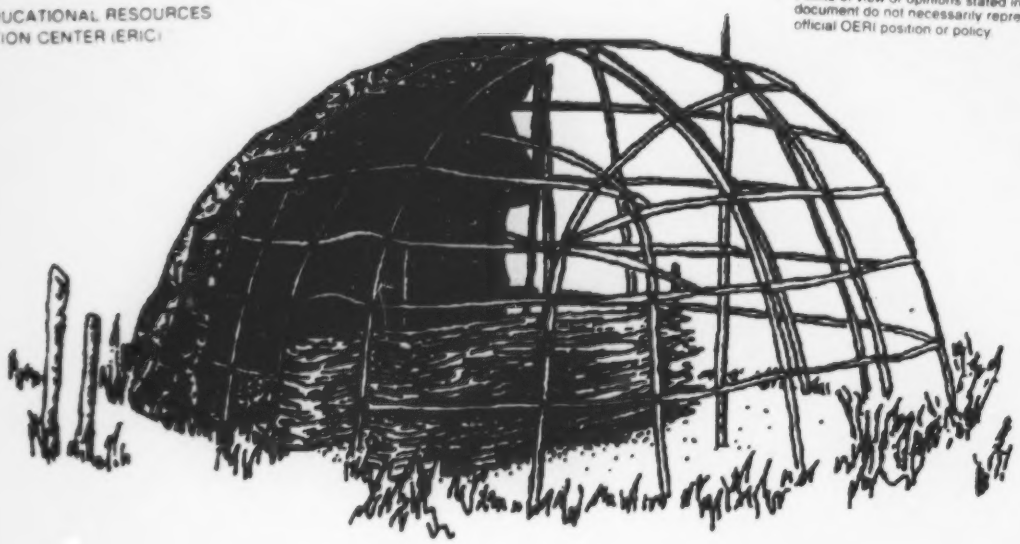

Paleoindian Dwelling
Reconstruction by Ernest Callahan

Window on the Past
Threshold to the Future

Virginia Archaeology Month

SO 026968

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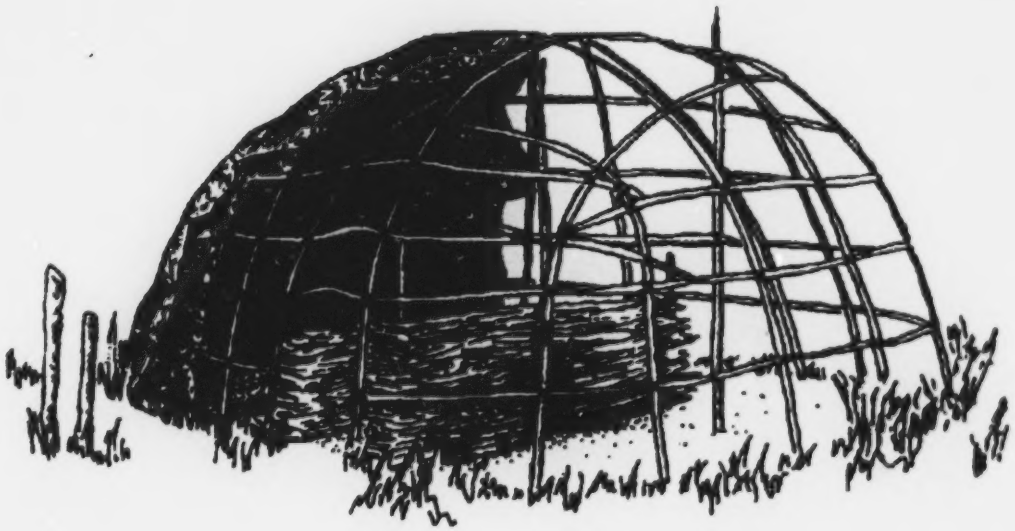

Paleoindian Dwelling
Reconstruction by Errett Callahan

Window on the Past
Threshold to the Future

Virginia Archaeology Month

ACKNOWLEDGEMENTS

In preparing for Virginia Archaeology Month, we took last year's Teacher's Guide and all the archaeology teaching packages that have crossed our desks to select the best from each to include under the theme: "Window on the Past: Threshold to the Future." Our goal with Virginia's teachers is to make available the best of what is being used across the country. You will find in the Teacher's Guide material we wrote in previous years, new classroom activities suited to this year's theme, and great activities--some reprinted in their entirety, some excerpted and adapted--from Alexandria Archaeology, the Archeology Society of Virginia, the Bureau of Land Management, the Francis Land House, Jamestown Settlement, the Society for American Archaeology, Public Education Committee, and the Texas Historical Commission. For their generous permission to share their work, we offer our thanks.

M. Catherine Slusser, State Archaeologist
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INTRODUCTION

The word archaeology conjures up images of antiquity and exotic, far away lands. Archaeology is synonymous with mystery. Many people, however, do not realize that archaeologists are at work throughout Virginia. One need not travel very far to find archaeology working to decipher the mysteries of *our* past.

According to the Webster Unabridged Dictionary, "mystery" means "any thing or event that remains so secret or obscure as to excite curiosity." Archaeology excites curiosity in adults and children alike because it solves intriguing puzzles and uncovers secrets. It is no wonder that teachers see the potential for using the problem solving aspects of archaeology to study history and other subjects.

Many elementary and secondary teachers use archaeology to build knowledge and skills in a number of subject areas. Archaeology can help teachers employ these Standards of Learning and accomplish the following:

Language and Communication:

- Build strong oral communication skills.
- Develop a store of images necessary for language development.
- Read with understanding for a variety of purposes.
- Use appropriate language for both formal and informal communication.

Sciences:

- Provide exercises to develop problem solving skills.
  Emphasize process skills, such as
  observation,
  classifying objects,
  communicating data,
  using quantitative measures for comparing, describing objects and events,
  making inferences, predictions, and hypotheses,
  constructing and interpreting models,
  interpreting data.

- Develop a method of inquiry, such as
  asking questions,
  searching for data and their meaning,
  considering premises and consequences,
  and respect for historical contributions.

- Focus on solving problems, using concepts and processes. Provide opportunities for students to use science's systematic approaches to investigate real problems in the community, and to use systematic approaches to make decisions.

- Provide information about careers and avocations in various areas of science.

- Show the relationship of science to other disciplines. Stress themes common to all sciences.

Social Studies

- Encourage skills which help students connect knowledge with action:
  map and globe skills,
  direction,
  location,
  distance,
  symbols,
  chart/graph,
  time/date skills,
  study skills--locate, gather and evaluate information,
  inquiry/group skills--group interaction, problem solving.

- Develop knowledge of history and culture of nation and world, physical and cultural geography.

- Develop citizenship skills - among these, appreciating diversity in the community with its challenges and opportunities, accepting responsibilities, exercising rights.

Mathematics

- Problem solving. Emphasize the process of problem solving. Expose the student to a variety of problems--span many fields of interest, fields of application, and mathematical models.

An important goal of the Department of Historic Resources is to promote knowledge about Virginia's history and appreciation of the places that represent that history. Virginia's archaeological sites are important remnants of 12,000 years of human occupation. In sites dating to 10,000 B.C., people lived in bands, hamlets, and villages of varying complexity for thousands of years before the coming of the Europeans to Jamestown. Much of what we know about life before Jamestown and even the everyday lives of more recent Virginians, comes from archaeological sites. The knowledge that we enjoy today is just a fraction of what remains to be discovered.

(Credit: Adapted in part from Alexandria Archaeology.)

WHAT IS ARCHAEOLOGY?

Let's begin by defining our terms. Just what is archaeology and how does it benefit teachers and students?

Archaeology is:

- the scientific study of the remaining traces of past human culture, technology, and behavior. Archaeologists propose research questions to learn how specific ways of life developed and how they changed over time.

- a subdivision of anthropology, a discipline which examines human development and behavior from four viewpoints. Cultural anthropologists study present cultures. Physical anthropologists study physical development and evolution. Linguistic anthropologists study the development and evolution of languages. Archaeologists study the material remains of cultures, including written records, artifacts, structures, trash dumps, soil discoloration, or other evidence of human behavior.

- a discipline that promotes understanding of present and past human populations.(Credit: *Teaching Archaeology*, Society for American Archaeology.)

Classroom benefits:

- Evidence and interpretations from archaeological studies provide a different perspective on history drawn just from the written record.

- Techniques used in archaeology provide unusual exercises to teach such skills as measurement, comparing and contrasting, detailed observation, description, and making inferences from observing evidence.

- Since archaeology draws on concepts and research in biology, geology, and physics it can be used to teach those subjects and to show how each of those sciences can be applied to learn more about human history.

Most people think archaeology means digging sites and finding artifacts. Archaeology is really about studying the people who lived and worked on a site and who made and used those artifacts. Archaeologists spend more time analyzing the evidence they have found, and comparing it to information found on other sites, than they do actually digging.

Archaeologists know that when they dig a site, they also destroy it. This knowledge makes them very careful to record all the different kinds of information they can. Because digging a site for any reason destroys part or all of the evidence about the people who lived there, the exercises in this workbook demonstrate the concepts and analytical techniques of archaeology without requiring any digging.

If you wish to involve students in digging exercises, please try creating a "fake" site that you can use over and over again, or choose a place where the learning exercise will not do damage to an actual site--even better, take your students to a real

archaeological dig where they can see archaeologists at work and sometimes even work with them.

WHY IS THE PAST IMPORTANT?

Subjects: Science, Social studies, language and communication.
Skills/Strategies: Developing scientific method of inquiry, process skills, and oral communication skills.
Age Level: Grades 4-8.
Time Required: 15 to 30 minutes.
Materials: Students bring to class an object, photograph, or drawing that represents their past.
Objective: In this introduction to their study of archaeology, students will use a personal object to:

1. Share information on their immediate past.
2. Draw a parallel between the importance of understanding the immediate past and the larger past of human history.

♦ ♦ ♦

Sites and artifacts hold clues to the past. If we know how to read their messages, material remains can tell us about the people who made and used them. Owners of the artifacts and the inhabitants of the sites may have lived 50 years ago or even thousands of years ago. They experienced similar needs and concerns, hopes and fears, joys and sorrows that we have today. And yet, each era in which they lived was marked by unique challenges and ways of looking at the world.

My Family Past
Activity 1

Ask the students to bring an object (artifact) from home that tells about their family's past. Working in groups of three to four, have students tell each other what the object conveys about their past.

In a class discussion, ask the following questions:

a. Is it important for you to know about your past? Your family's past?

b. Is it important to know about the human past?

c. Humans have lived in Virginia for at least 11,000 years. Is it important to know about their lives?

d. What can we learn from the past? (Students brainstorm ideas. How did humans live in the past? How and why have human cultures changed over time?

e. If your past is important to you, what statement can you make about the importance of the past in general?

Repeat this lesson at the close of your study of archaeology to demonstrate that students have broadened their knowledge of archaeology and the past. (Credit: *The Intriguing Past*, Bureau of Land Management.)

MORE THAN MEETS THE EYE

Kingsmill, near Williamsburg, is an example of a planned community in which the real estate developer uncovered a series of significant archaeological sites and preserved what was there for generations to come. The developer, Anheuser-Busch was among the first in Virginia to voluntarily investigate its property, display the unearthed artifacts in a permanent exhibit, and preserve the layout of excavated buildings for everyone to see.

A developer frequently conducts archival research and an archaeological survey of his property first, to evaluate what lies beneath the ground before he begins planning the placement of streets and lots. In this instance, the chance find by a local citizen of a well eroding out of the bluff along the James River ignited the Kingsmill project.

Over the next few years, Anheuser-Busch, working closely with archaeologists, did extensive archival research, followed by systematic archaeological survey, testing, and exciting excavation. The planning team experienced the science of archaeology unlocking the mysteries that lay hidden beneath their feet. Kingsmill incorporated this information into its planning process in a number of ways. First, the staff avoided significant sites, preserving the archaeological remains. Also, the planners used the names of colonial people and places, identified by the archival research, to identify their streets and residential areas.

What was found at Kingsmill has revolutionized the way we look at the colonial experience in Virginia. The early post-in-the-ground homes followed in time by more permanent homes with brick foundations is a graphic illustration, more than words can express, of how Virginia evolved from a frontier wilderness loaded with uncertainties to a stable colonial power. The recovered pieces of dishes, rusty objects of iron, and the bones left from meals paint a picture of people struggling to make a living by using a combination of local products and familiar items brought with them from Europe.

The recovered artifacts were carefully recorded, cleaned, preserved, studied, and curated. The Kingsmill project contributed to a wide range of articles, dissertations, and books. Even today, more than 20 years after the project began, archaeologists are still studying and re-studying the curated artifacts.

Many of the artifacts are attractively exhibited at the Anheuser-Busch Hospitality House and at the golf clubhouse. Other artifacts, exceptional examples of their type, have been exhibited in museums up and down the East Coast and throughout Virginia. Today Kingsmill residents, visitors, and students may see the layout of three of the colonial sites, spanning the period 1640 to 1820, preserved in beautiful park-like settings overlooking the James River.

And for the people who live there today the mysteries have been partially unlocked. They know that their community--the places where they live, play, and work--was once the place where Indians lived and colonial settlers later built their first homes. Their sense of community heritage has been enhanced, adding a sense of historic richness to their neighborhood and land.

TRACING THE FOOT STEPS OF AN ARCHAEOLOGIST

Students can use the same process builders use to unravel the mysteries of what once existed on their school grounds, or within their neighborhood, town, or region.

Archaeological projects are conducted in a step-by-step process. This process can easily be adapted to help students systematically approach any research or problem solving project. The following activities take students through each of the steps, beginning with research, survey and stratigraphy, and ending with analyzing, interpreting, and protecting the most important findings.

ARCHIVAL RESEARCH
First Things First

Subjects: Science, social studies,language and communication skills, library research.
Skills/Strategies: Research and study skills, team building skills, collaborative writing/oral communication skills, inquiry skills, developing knowledge of physical and cultural geography.
Age Level: Grades 4-8.
Time Required: 3 class periods--two for research, one for reports.
Materials: Photocopies of primary source materials; reports on secondary sources.
Objective: To introduce students to research methods used by archaeologists to unravel the mystery of previous human activity at a site. What happened here?

In their studies of human culture, archaeologists rely on written information to help them find sites and to better understand the artifacts and the events that took place on the site. The best type of written information for a archaeologist is a primary source. Primary sources are the original written records and diaries left by early explorers, traders, and travelers; deeds, tax and census records in local court houses; birth, marriage, and death records from church files; and early photographs and maps of a region. Secondary sources, such as history or school text books, can be useful if they are accurate.

Research First--Going to the Source
Activity 1

Choose a research region, such as the school grounds, local neighborhood or town, and a research topic, such as Virginia Indians, early Virginia settlers, or town history. Using the school library, have small groups of students conduct archival research on their topic. Have them present a joint report on their findings.

A Speaker for Your Class
Activity 2

Invite speakers from a Virginia Indian tribe, a local historian, or a professional archaeologist to talk to the class. Such people can add to your program with first-hand information about the artifacts, lifestyles, and traditions of people spanning

11,000 years--that's more than 11,000 years of people living, changing, and developing! Some speakers are quite willing to travel and will bring hands-on activities for students. (See enclosed "Speaker's Directory.")

Where to Go--Exhibits and Events
Activity 3

A visit to a nearby Virginia Archaeology Month event may add background information to your students' research. See this year's Calendar of Events for listings of guided tours to archaeological sites, special talks, digs, hands-on visits to research labs, on-going field work at Mount Vernon, Montpelier, Monticello, Poplar Forest, and Williamsburg. Plan a field trip to an historical or natural history museum in your area. Many of these places have exhibits and events throughout the year.

Legacy from the Past
Activity 4

Our present-day language is constantly shifting and changing. Some words we use everyday remain from the languages of Virginia's early tribes. These words can give us clues about the Indians' culture and lifeways. Use the enclosed "Indian Words from Coastal Virginia," "Indian Words from Piedmont Virginia," and "Indian Names: Clues to Culture and History" lists to stimulate discussion. Do you know of any other local words of Indian origins that are not on the lists?

INDIAN WORDS FROM COASTAL VIRGINIA
(Activity 4 - Legacy From the Past)

The following words are from the coastal Powhatan chiefdom, Algonquian language family.

Accomac-other side of town, across the water.

Anah-farewell.

Apooke-tobacco.

Appomattoc-trap, fishing river, waiting place.

Arrahacounes-(or **Rahaughcums**) raccoons.

Attawp-a bow.

Attomois-a dog.

Chesapeake-country or people on the great river, big salt bay.

Chickahominy-cleared place, or crushed corn people.

Crenepo-a woman.

Kecoughtan-great town.

Mockasins-shoes.

Monacan-digging, diggers, from a word for digging stick.

Muskins-eyes.

Musses-woods.

Nechan-a child.

Netoppew-friends.

Noughmass-fish.

Nemarough-a man.

Okes-gods.

Oppossum-oppossum.

Pamunkey-sloping hill.

Patawomeck-(Potomac) trading place.

Pokosack-a gun.

Powhatan-priest's village, town at the falls. (1) indian title for Wahunsunacock, leader of the Powhatan chiefdom, (2) name for birthplace (village) of Wahunsunacock, (3) Name used by English for the Indians of a chiefdom in coastal Virginia.

Suckquohana-water.

Tamahaac-(or **Tomachawk**) a hatchet.

Tsenahcommacah-Virginia.

Wingapo-welcome, word of greeting.

Yehakin-house, longhouse.

INDIAN WORDS FROM PIEDMONT VIRGINIA
(Activity 4 - Legacy from the Past)

The following words are from the piedmont Totero Indians, Siouan language family.

Tani-autumn.

Nisep-axe.

Munti-bear.

Yaop-beaver.

Pus-cat.

Wakasik-boy.

Kahi-crow.

Ati-father.

Wagate-girl.

Minosa-moon.

Hena-mother.

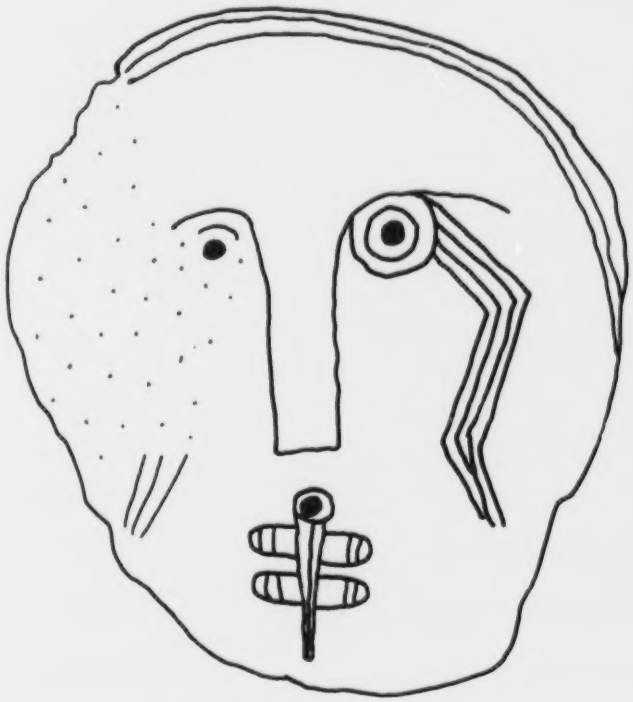
Taskahoi-oak.

Wasti-pine tree.

Mi-sun.

Mani-water.

Mihan-woman.



Note: These words were gathered in the late 1800s from the last surviving full-blooded Totero Indian.

INDIAN NAMES: CLUES TO CULTURE AND HISTORY
(Activity 4 - Legacy From the Past)

How did river, steams, roads, counties, states, and towns get their names? How many of them came from Indian origins?

Anthropologists study languages to better understand history and how people lived and thought in the past.

Using a blank U.S. map, have students locate and color states in the U.S. that have Indians names. Which names are geographic in origin, refer to Indian groups, express ideas?

Alabama-tribal name, also **Alibamu**, from two Choctaw words, **alba**; thicket or plant and **amo**; reapers.

Arizona-probably from Pima or Papago, **ali**; small; and **shonak**, place of the spring; or possibly from Spanish **arida** and **zona**, dry zone; or from the Aztec word **arizuma**, silver-bearing.

Arkansas-after French name Alkansas or Akames, for Indian Tribe later known as Quapaw.

Alaska-Aleut word meaning mainland as opposed to islands.

Connecticut-a Mohican word meaning "long river."

Delaware-tribal name.

Dakota-tribal name for people also known as the Sioux.

Idaho-from Shoshonean, meaning coming down; **dah**, sun or mountain; and **how**; an exclamatory phrase meaning, "Behold, the sun coming down the mountain".

Illinois-tribal name which means "men."

Iowa-a tribal name.

Kansas-tribal name which means "People of the south wind."

Kentucky-either from the Wyandot word **ken-tah-teh**, land of tomorrow; or from the Iroquoian **kentakie**, meadow land.

Massachusetts-from two Algonquian words, **massa**, great; and **washusett**, hill.

Michigan-an Ojibway word meaning "big lake."

Minnesota-from two Siouan words, **minne**, water; and **sota**, which can mean "reflection of sky on water" or "cloudy."

Mississippi-from Algonquian, **messipi**, big river.

Missouri-tribal name which means "muddy water."

Nebraska-from the Siouan **ni**, water; and **bthaska**, flat, in reference to a wide river.

New Mexico-Mexico is an Aztec word meaning "place of the war god."

Ohio-from Iroquian **oheo**, beautiful.

Oklahoma-Muskogean word for "Red People," coined by Allen Wright, A Choctaw chief, to designate the Indian Territory.

Oregon-possibly from Shoshonean, **oyer-un-gon**, place of plenty; of Shoshonean, **ogwa,** river; and **pe-on**, of the west, or possibly from Siouan, **ourigan**, referring to a great western river.

Tennessee-Cherokee village name, **Tanasi**.

Texas-indian adaptation of Spanish tribal name, **Tejas,** allies.

Utah-from tribal name **Ute** or **Eutaw**, meaning "high up," "the land of the sun," or "the land of plenty", or "in the mountain tops."

Wisconsin-French version of Ojibway **wees-kon-san**, the gathering of the waters or grassy place.

Wyoming-from the Delaware word, **maughwauwame,** large meadows.

(From: *Atlas of the North American Indian*, by Carl Waldman, Facts on File Publication, NY 1985.)

SURVEY
MAP IT, GRID IT

Subjects: Science, social studies, mathematics, language and communication skills.
Skills/Strategies: Problem solving as a process; using process skills such as analyzing, inferring; developing scientific method of inquiry; developing mapping, locating, directional skills; showing the relationship between science and other disciplines.
Age Level: Grades 4-8.
Time Required: 30 minutes, each activity.
Materials: Site Area Map, Artifact Record.

Objective: When it comes to problem solving, the archaeologist's method of research can help. In approaching a problem, the first step is to do one's "homework" by gathering background information through primary and secondary sources. Then survey the "problem area" itself, gathering first-hand knowledge about it. In archaeology, this is done through systematic surface collections and test excavation. A lot of knowledge can be gained by studying all the surface clues available and with limited excavation.

♦ ♦ ♦

After the initial work of researching primary and secondary sources, archaeologists survey the project area. During the survey, they look for anything that is not natural to the area: a row of rocks or bricks (possibly the remnant of a wall), dark soil (traces of a possible midden or garbage pit, hearth, or burned structure), and bits of glass, pottery shards, and stone flakes. They make accurate maps of the area, showing the boundaries of each site, landforms, buildings, and surface contour.

When a site is found, its boundaries are defined and mapped. The archaeologists also lay a grid pattern, or network of squares, over the site with stakes to help map the location of artifacts. All artifacts within the boundaries are mapped, numbered, and recorded. They are collected only if the site is part of a research project, or if the site will be disturbed, and if permission has been granted by the landowner. Most sites, in fact, are not excavated, but remain as they are in the ground.

Science on the Surface
Activity 1

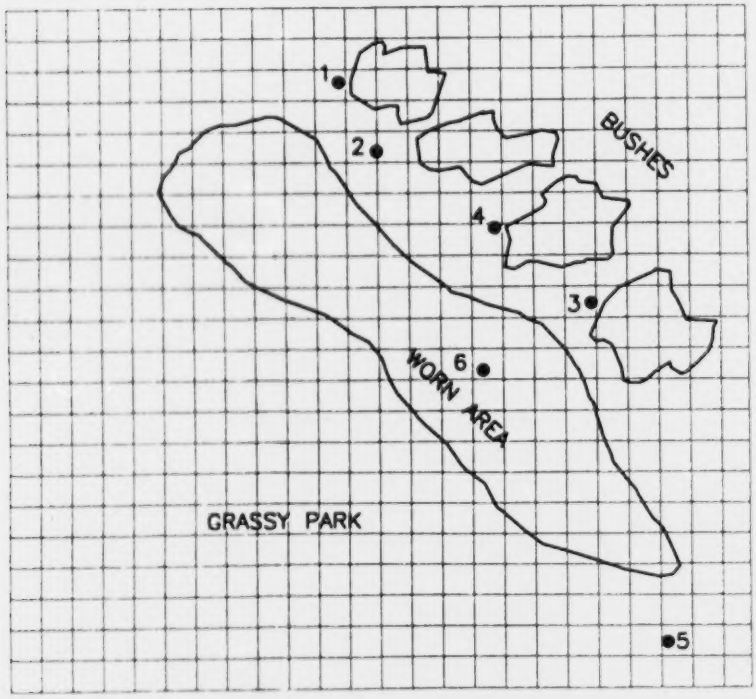
Imagine that it is the year 2094. The school has been abandoned for a long time and is in ruins. The ruins will soon be removed and the grounds prepared for a housing development. Working in groups of three or four as a team of archaeologists, the students choose a site area on the school grounds. Each site must be a place where many people congregate, such as an outdoor lunch spot, small parking lot, baseball diamond, or bus stop. Using the Site Map and Artifact Record as guides, each group will:

- make a map of the site using graph paper (See "Site Area Map");
- describe features of the site such as the floor, walls, furniture, sidewalks, or vegetation present;
- assign each observed artifact (food wrappers, bottle caps, paper, and other items) a unique number and record it;

Artifact Record

Number	Location	Description	Use
1	next to bushes	Hardees sack	carry out
2	next to bushes	Mountain Dew can, smashed.	drink container
3	next to bushes	Gatorade cap	lid to jar
4	next to bushes	brown paper bag	carry lunch from home
5	grassy area	cigarette butt	smoking
6	worn area	cigarette butt	smoking

Site Map



Site Description

Most of the artifacts are found underneath the bushes. They may have been blown there by the wind. There is a large worn area without grass; the rest of the area is covered with grass.

record the artifact location, description, and possible use on note paper,

- mark the location of each artifact on the site map using its assigned number.

Note: the "artifacts" may not be collected because archaeologists generally cannot collect artifacts from sites until they obtain permission to do so.

Have each group file a Final Report Activity Sheet. Each report will include:

- An "Introduction" that describes in general the location, name, and makeup of the site area.

- Under "Methods," the team will relate the size of the area surveyed and methods used.

- Under "Results," the report will summarize the size of the site in which clues were found and the data collected (with older students, use of bar graphs, and tables can be encouraged).

- In "Inferences," the students can draw conclusions about how the site was used based on the artifacts present, their relationship to each other, and to the place where they were found. A list of additional sources of evidence, such as direct observation of trash dumping, might confirm their inferences.

How is the campus similar to an ancient Roman town or a Virginia Indian village? How is it different? Did survey of one portion of the school grounds tell the whole story of school life? Would the same be true of an ancient site? Why or why not? (Credit: *Archaeology and Public Education*, SAA.)

Grid It
Activity 2

A grid activity can serve as a lesson or a review on cardinal and intermediate points of the compass, mapping, and metric and English measurements.

Archaeologists use a grid to make an accurate map of a site. First, they draw a base map to show where the site is located. The grid is used as a measuring system. During the excavation, as archaeologists discover features and objects, they add the location of these findings to the grid. The grid acts as a record of the exact location of whatever remains are found. The axis of the grid is aligned with the cardinal points of the compass. Draw an axis and label the cardinal points of the compass on the board (north, south, east, west). Ask your students to point out the intermediate directions or quadrants (northeast, southeast, etc.). Bring a compass into the classroom and discuss why the needle always points in the same direction (magnetic north). (Magnetic north is the north pole of the earth's magnetic field and is the direction indicated by the north-seeking pole of a horizontal magnetic needle).

Each grid has a point of reference, called the datum, from which all measurements are taken. The figure shown here is an example of a grid set up in the northeast quadrant. A pair of coordinates identify each excavation square, or unit, by counting the number of units (meters or feet) to the north and east of the datum point.

For example, unit **N1/E2** is north (up) one square and east (right) two squares. Sometimes only a few test squares within the grid site will be dug, while on other

sites, the entire area is excavated. (Credit: Archaeologists at Work, Alexandria.)

Ask the students to name things that look like grids (checkerboard, graph paper, city block system). Why are things organized in grid patterns? Do grid patterns occur in nature?

Archaeologists use measuring tapes to create grids and to locate artifacts within grids. When excavating an Indian site, many archaeologists use a metric tape (meters, decameters, and centimeters). While on a historic site they will use the English system (inches, feet, yards) because many of the structures, walkways, and fence lines were originally laid out using the English system. Bring tapes into the classroom that are metric and English. Have teams of students measure themselves (finger, arm, height) and between any two points in the room (door to window, desk to bookcase). Compare what the distances are in metric and English.

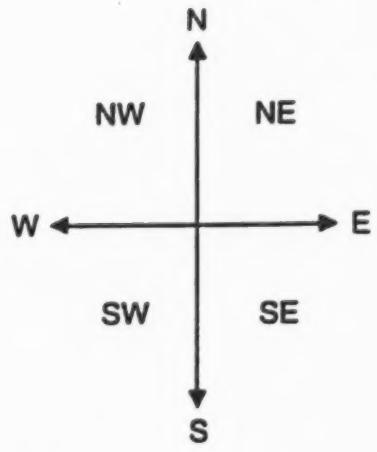


Fig. 1

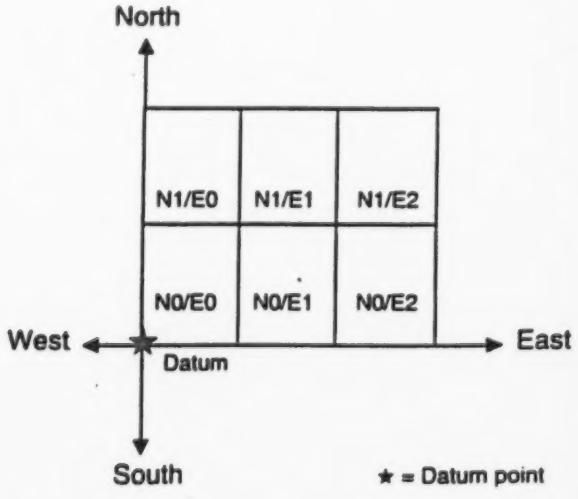


Fig. 2

23

CHRONOLOGY--STRATIGRAPHY

Subjects: Science, social studies, language and communication skills.
Skills/Strategies: Interpreting data, developing time/date skills, inquiry skills, oral communication.
Age Level: Grades 4-8.
Time Required: 20 minutes each activity.

Objective: The study of chronology will demonstrate the importance of intact information to achieve accuracy. Students will compare their personal timelines with chronological information contained in a stratified archaeological site.

♦ ♦ ♦

The proper sequence of events must be known when trying to understand the past. Chronological order means that events are arranged in the order in which they occur. One way to display events visually in chronological order is in a horizontal or vertical timeline. A timeline is divided into equal time segments--days, months, or years, for example. The oldest events are set along one end and the most recent events at the other. (See the "Rule of Time.")

We use chronology every day. When we read a story or watch a news report on TV, it only makes sense when we can understand the sequence of events. Archaeologists always try to establish the age of the site, artifacts, or events they are studying so that they can place them in chronological order. Each piece of information contributes some understanding to the overall story of the past, but only if it can be placed in chronological order.

Archaeological data are often buried. When archaeologists dig a site, they record the location of what they find, so that chronological order can be established. Objects discovered at the lowest levels of a square are the oldest, while those near the surface are the youngest.

When a site is disturbed and the layers mixed, any recovered artifacts can not be placed in chronological order or cultural context. The information for understanding the past has been lost at this site.

The Time of My Life
Activity 1

Have the students list 10 events in their lives, one on each of 10 strips of colored paper. Do not include events that reveal numbers, such as "When I turned 10," or other obvious disclosures. They then shuffle their strips and exchange them with another student, who tries to lay the strips out in correct chronological order with the most recent at the top.

The two students who have exchanged strips then tell each other their best guess of the proper chronological order. Were you able to reconstruct the timeline correctly? It is difficult, sometimes impossible, to reconstruct a story if the order of events is not known.

Ask students to randomly remove four events from their personal timeline. Is the chronological order more difficult to construct? Is the story of the student's life less complete? Compare this activity to archaeological sites where the artifacts have been removed or mixed. (Credit: *The Intriguing Past*, BLM.)

Create Stratigraphy
Activity 2

Show the students the example of stratigraphy given on page 23 in "What is Archaeology Stratigraphy." Why are certain Indian artifacts lower than others? Why is the brick wall at the top and above other historic artifacts?

Divide the class into groups and have each group draw a stratigraphic model of an imaginary site on the board based on the background research and survey done in the sections "First Things First" and "Map it, Grid it." Their model should have Indian artifacts at the bottom and historic artifacts and remains at the top, perhaps capped off by concrete pavement.

WHAT ARE ARCHAEOLOGICAL TIME PERIODS?

Indians lived in Virginia for about 11,100 years before European contact. The Indians had no written language. Writing was a skill they learned from the Europeans. The period of time before the coming of the Europeans, then, is called "prehistory." It refers to the time when the Indians recorded events through storytelling and symbols.

These prehistoric years are divided into three periods: Paleoindian, Archaic, and Woodland. The years after European contact are called "Historic." While information on prehistoric times is limited, some Indian lifeways have been identified through archaeological research.

Paleoindian Period 9500-8000 B.C.

People first came to Virginia between 11,500 to 12,000 years ago. These Paleoindians lived at the end of the last Ice Age during the time of the great northern glaciers. The small bands of people camped along streams which flowed through the tundra-like grasslands and the spruce, pine, and fir forest which covered Virginia at that time. They hunted the mastodon and other large game animals, such as elk and moose, with spears. They cut the meat up with stone knives and prepared the skins with stone scrapers.

Archaic Period 8000-1200 B.C.

During Archaic times, the climate warmed and the oak/hickory forests spread across the land. People depended more on plants and small game animals for a food supply, because most of the large game had become extinct or moved north with the warming weather. At the beginning of the period, people camped in band clusters, but at the end of the period, due to the increasing numbers, they formed larger tribal units living in hamlets. They hunted their game with a spear thrower, cut timber and firewood with axes, and prepared their food--nuts and tubers--with pestles and mortars.

Woodland Period 1200 B.C. - A.D. 1600

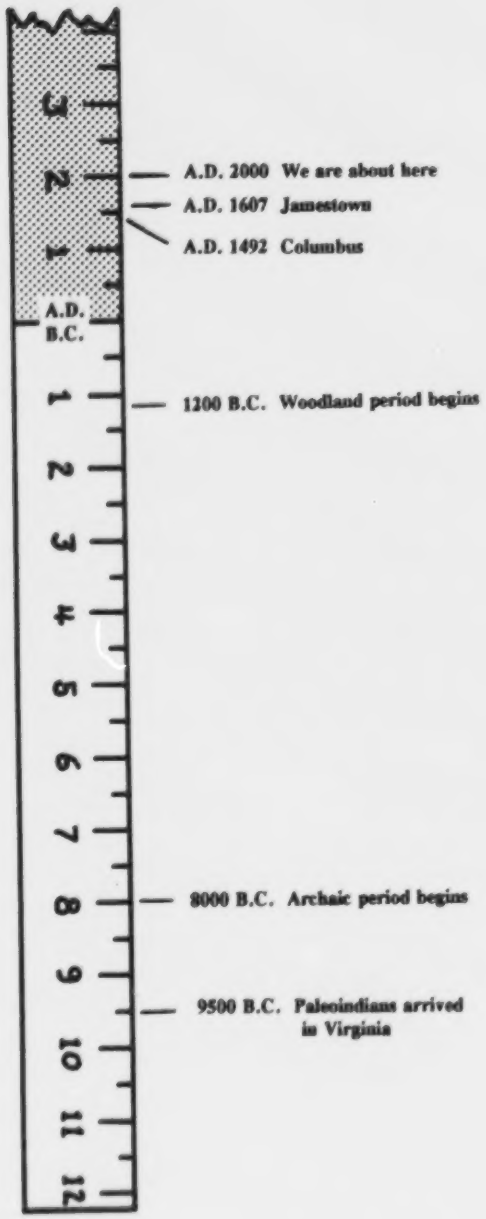
Changes occurred rapidly as the population continued to increase. People now cooked and stored their food in fired clay vessels. They smoked pipes. They hunted game animals with a bow and arrow. They buried their dead with great ceremony in burial mounds. Some groups built earthen mounds on which they placed their sacred temples. The greatest change was the arrival of corn and beans and the people's increasing dependency on them. The Indians now formed tribes and chiefdoms and lived in large, well-organized villages of hundreds of people.

Historic Period After A.D. 1607

The Historic Period in Virginia began when the English arrived at Jamestown in 1607. The new settlers brought with them different tools, clothing, and lifestyles. Conflicts over land and the spread of new diseases altered forever the lives of Virginia Indians. By 1700, only a few hundred Indians lived in Virginia compared to the 50,000 Indians that lived here 90 years before. Today there are eight organized tribes in Virginia and two small reservations. There are 2,500 people on the tribal registers and the census figures show another 15,280 people of Indians ancestry living across Virginia.

(Note: See First People: The Early Indians of Virginia by Keith Egloff and Deborah Woodward, in your school or local library. Published by University Press of Virginia, Charlottesville.)

RULE OF TIME



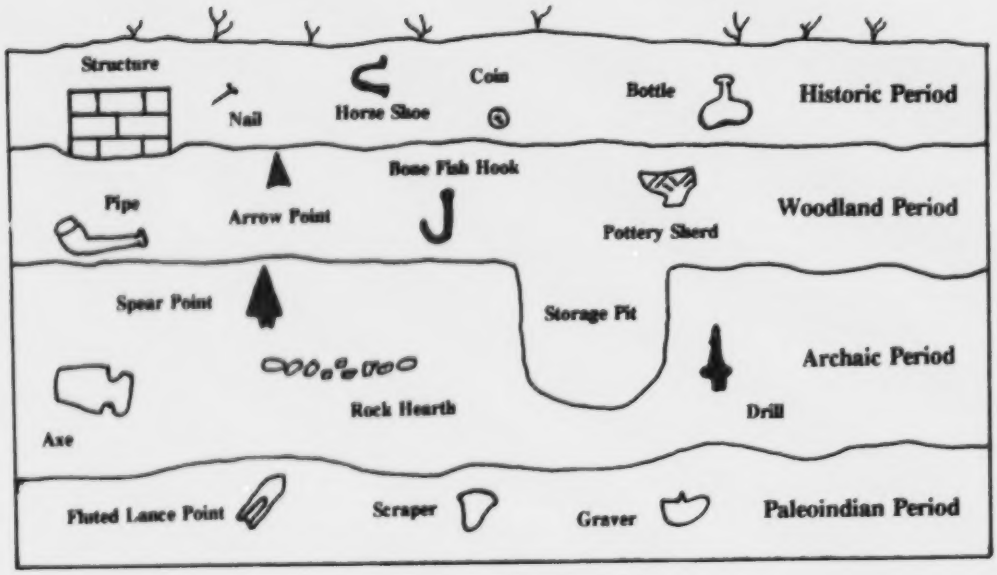
Note: Time periods spanning B.C. and A.D. are often confusing to students. Some discussion may help. Evidence of Indians in Virginia dates to 9,500 B.C. Do your students understand that 11,493 years have passed since that date? And that to say Indians have been in Virginia for 11,493 years, they must add the two dates together, 9,500 B.C. and 1993 A.D.?

WHAT IS ARCHAEOLOGICAL STRATIGRAPHY?

From the science of geology, we know that the surface of the Earth is subject to two major processes: erosion and deposition. Natural forces wear down the earth's surface. Historically, man has speeded up this process by exposing large fields of land during farming to water and wind erosion. On the average this has removed from one to two feet of topsoil from most fields in Virginia. Modern agricultural practices have reduced erosion and soil loss.

Soil removed from one location is deposited elsewhere. Soil deposition occurs in low, sheltered areas--in rockshelters, along river floodplains, and in the Atlantic Ocean on the continental shelf. If man has lived where deposition occurred, then the objects left behind will be buried under soil. As this process continues layering of soil deposits occur and a stratified site is created.

Example of Stratigraphy
Artifacts Associated with the Virginia Time Periods



ATTRIBUTE AND CLASSIFICATION READING AN ARTIFACT

Subjects: Science, social studies, library research.
Skills/Strategies: Process skills such as classifying objects, interpreting data; developing scientific method of inquiry; developing study skills such as locating, gathering, and evaluating information.
Age Level: Grades 4-8.
Time Required: 20 minutes each activity.
Objective: To explore how objects and data are classified by studying their common attributes, reducing complexities to patterns, and comparing relationships between types.

♦ ♦ ♦

Artifacts are actual pieces of the past, three-dimensional survivors from points in time that are no more. To understand or "read" objects, you need to place them into a category that is based on an idea, or concept. In this way, classifying objects helps us to sort many impressions quickly. The process enables us to tell them apart from other things. Cats, for example, are classified as animals. We further define them as warm-blooded, four-legged mammals.

We classify objects almost automatically. This is done by choosing certain attributes to pay attention to while ignoring others. We cannot take all attributes into account at once, therefore, we select only a few as being relevant to the task at hand. For example, if we have a group of blocks alike in every way except for color, then color is going to be the attribute used for classifying.

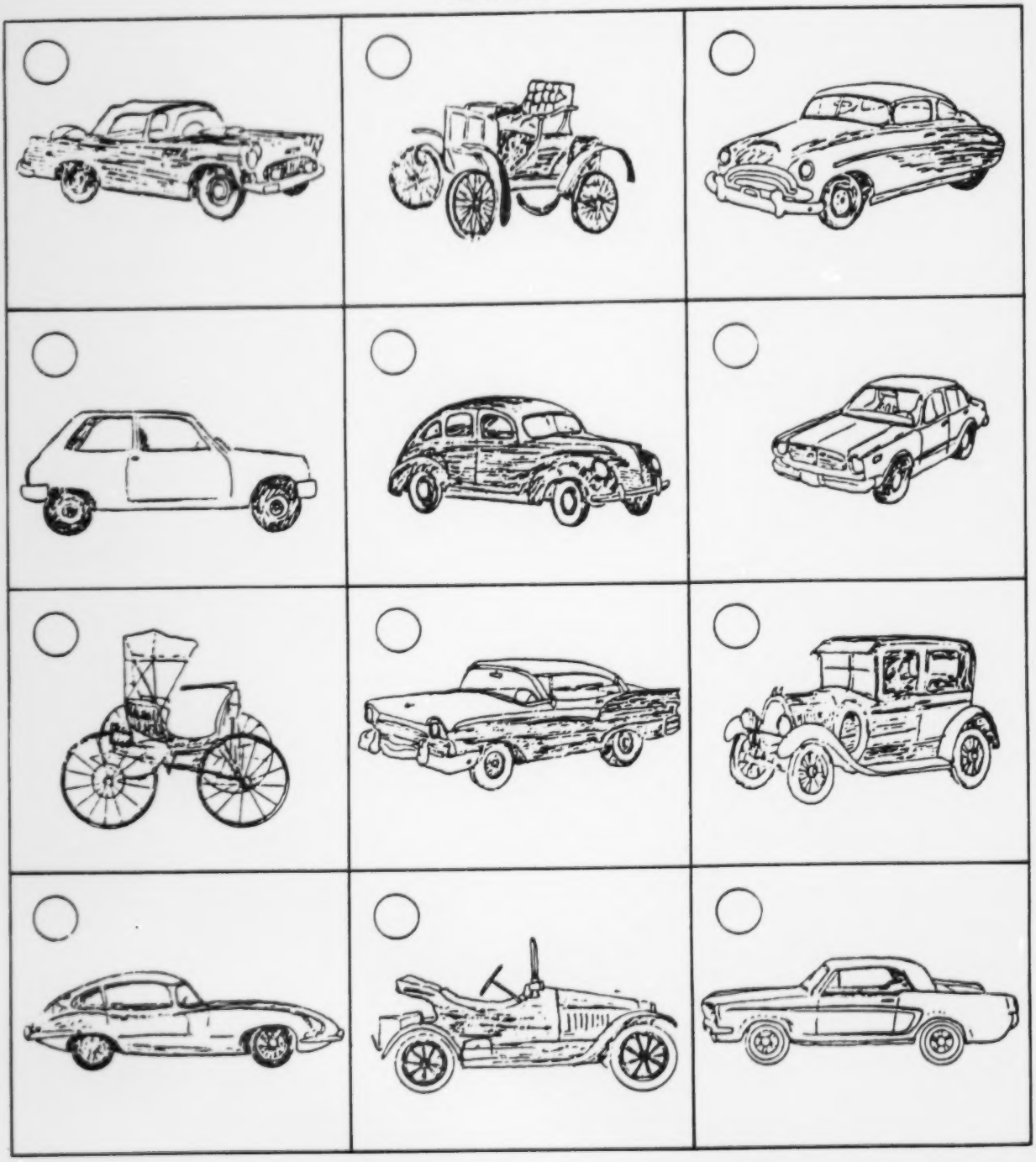
Classifying data is an important part of any scientific study, including archaeology. Scientists must place data into categories based on various attributes to reduce their complexity and to examine the relationships between types. For example, it is difficult to compare an orange tiger house cat with every member of the cat family. The variations in size, shape, hair length, color and markings offer too complex a picture. To reduce this complexity into a simple pattern, the orange tiger is compared with other examples in the category of "house cat," which may be further broken down by types. The class "house cat" can then be compared with the category of "wild cat" (types include tiger,lion, bobcat). (Credit: *The Intriguing Past*, BLM.)

In a similar way, archaeologists classify artifacts. When you examine an artifact, first ask yourself how it looks and feels, what are its physical properties. Questions may include "What is it made from? What are its dimensions, shape, weight, texture, and color?

After decoding an artifact's physical characteristics, the researcher will ask questions related to the object's social function--what the object was designed to do. Questions include "How was it made? By whom? When? What was the object for? How does it work?"

Having gained a sense of the object's physical and social characteristics, the final piece of the puzzle requires finding out how the object was connected to the culture that produced it. The researcher asks "Who used it? In what circumstances? In association with what other objects? Was it valuable to the people who made it? (Credit: *Insight*, Texas Historical Association.)

AUTOMOBILE TYPES
Activity 1



The way in which people make things changes over time. Small changes from year to year go unnoticed, but these changes can add up and after many years create a new type. Do you know the dates of each car? Write them in the circle if you do. Cut out and make a time line of the car types shown above. Now look on the next page. The Indians projectile point types should be in order by date. Which point is the oldest? Are you surprised by its age? Which point is the youngest?

Stanly
5300 B.C.

Hardaway
8500 B.C.

Morrow Mountain II
4000 B.C.

Badin
B.C. 200

LeCroy
6200 B.C.

Clarksville
A.D. 1600

Kirk
6500 B.C.

Guilford
4000 B.C.

Clovis
9200 B.C.

Savannah River
2000 B.C.

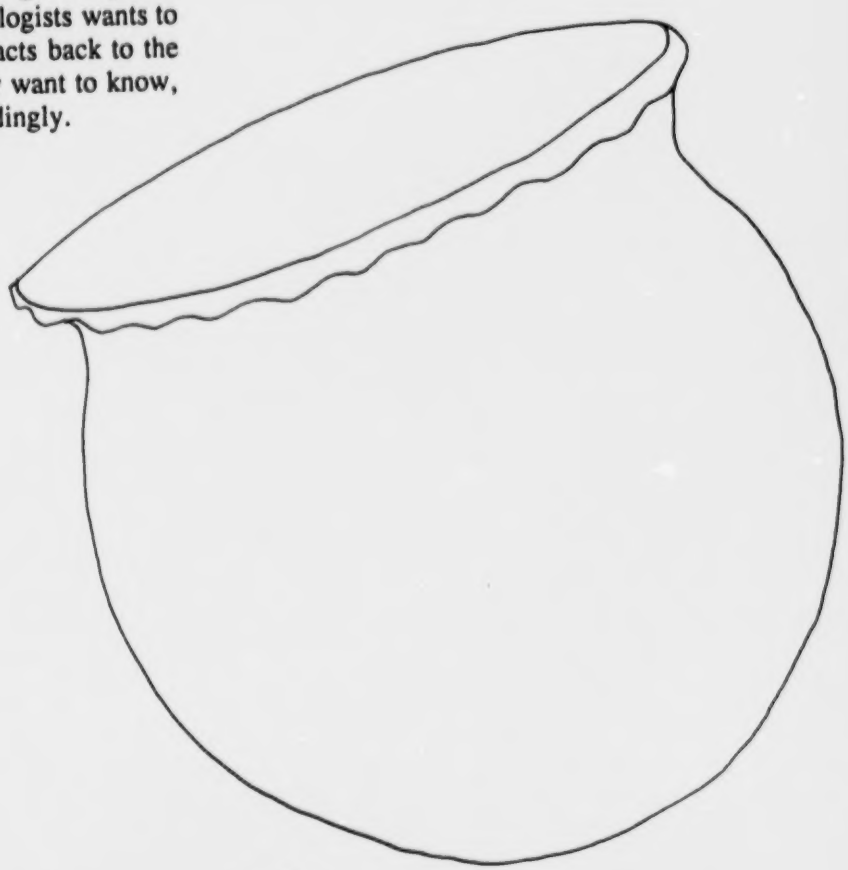
Palmer
8000 B.C.

Halifax
3300 B.C.

Choose Any Common Object
Activity 2

Divide the class into groups and have each group choose any common object in school to classify, such as pencils, chairs, books, clothing or shoes. Older students may want to classify houses or cars in the immediate neighborhood. Have each group organize the objects into classes, using their own scheme. When they examine an item, have them ask questions like "What is it made of? What are its dimensions? Does is have an odor? What is it shape--weight, texture, color?" They may go a step further and ask questions concerning the social function of the classes.

Explore with the students the idea that each classification system serves different purposes. The utility of a given system depends on what the archaeologists wants to know. They bring the artifacts back to the laboratory, decide what they want to know, and organize the data accordingly.



OBSERVATION AND INFERENCE FACT OR FANCY

Subjects: Science, social studies, language and communication skills.
Skills/Strategies: Process skills of observation, comparison, and inference; developing scientific method of inquiry; developing a knowledge of history and the similarities and differences of cultures.
Age Level: Grades 4-8.
Time Required: 15 to 30 minutes.
Materials: John White's drawings; Picture Analysis Sheet; small plastic trash can; paper money or coin; Indian and colonial house drawings.
Objective: To take students through activities in which they employ skills of observation, comparison, hypothesis, and inference.

♦ ♦ ♦

Science is based on observed facts and inference, not on fanciful imagination. Any phenomenon being studied must first be observed. An inference is a proposed reason for an observation. The hypothesis is a chosen inference that the scientist will prove or disprove through testing.

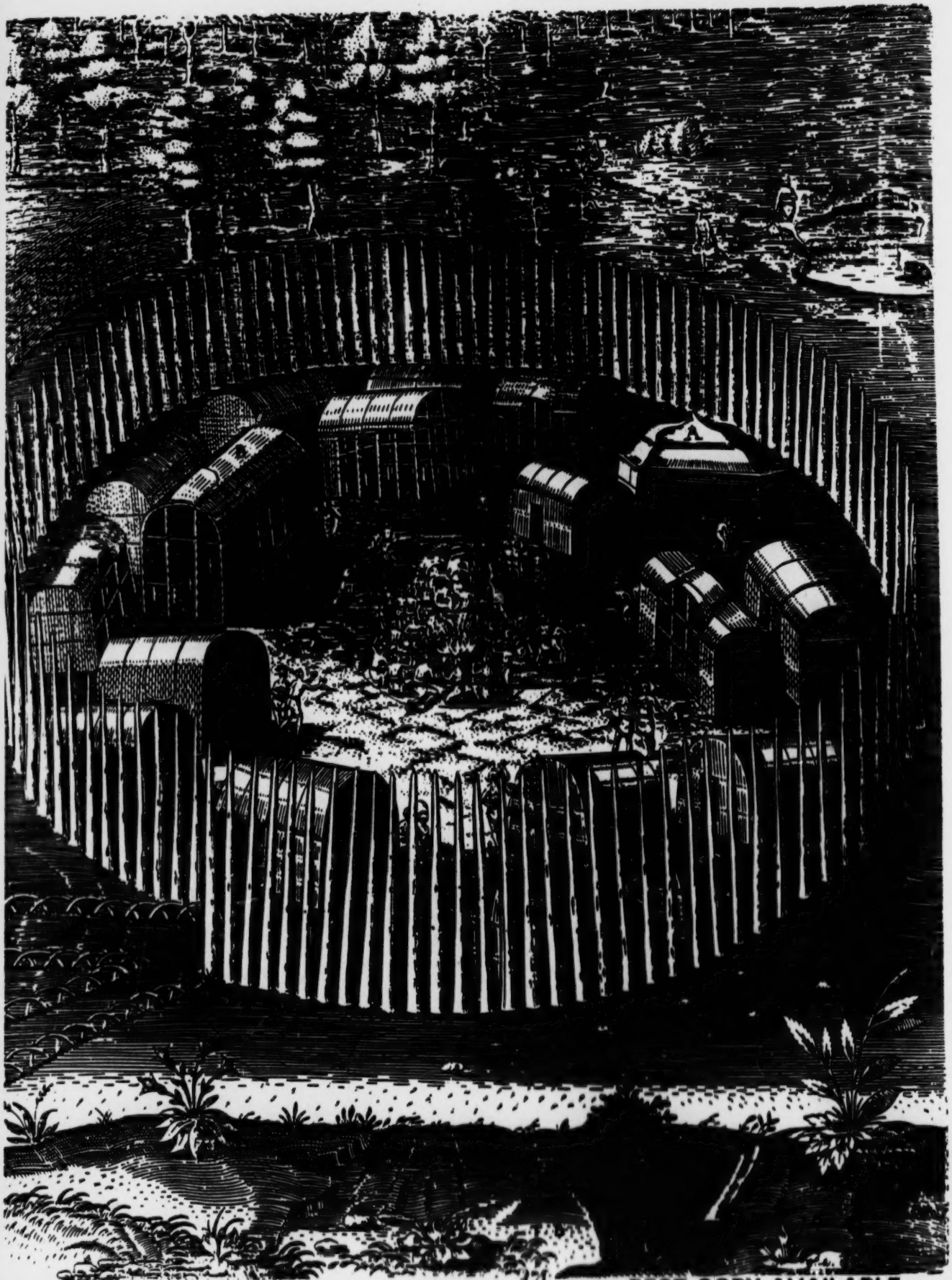
Archaeologists use observation and inference to learn the story of past people. By making observations about objects (artifacts and sites), they infer the behavior of the people who used the objects. When archaeologists find the remains of a large village (observation), they could infer that the people were farmers. To test that inference (hypothesis), they would look for evidence of farming such as farming implements (hoes) and food remains from crops (corn cobs and squash seeds). If they find these things, their hypothesis is verified. Archaeologists construct careful hypotheses and examine alternatives when making inferences from archaeological data. (Credit: *The Intriguing Past*, BLM.)

John White's Drawings
Activity 1

Using the enclosed copies of John White's 16th-century drawings of Indians along the coast of North Carolina, have students make inferences about Powhatan (coastal Virginia Indian) lifestyle.

Explain to students that these drawings were made by an English colonist at Roanoke Island, the site of England's first attempt at settling Virginia. (Explain that the Indians near Roanoke Island were not Powhatans, but historians believe they were living much like the Powhatans were living). Discuss with students the importance of these drawings (as a primary source, they are the only surviving illustrations of the Indian lifestyle before the influence of the English).

Break the class into groups, giving each group two or three of the drawings. Have each group choose a secretary, who will record ideas on a worksheet. In the first column, "What I See," students can write one-word descriptions of what they see. In the second column, "What This Tells Me," students can write inferences; for example, "the Indians lived in houses," "the Indians cooked fish in clay pots," etc. Which observation is each inference based on? Can more than one inference be based on the same observation? Choose one inference (hypothesis) and think of ways archaeologists might test it by looking at evidence from a site. Explain that students



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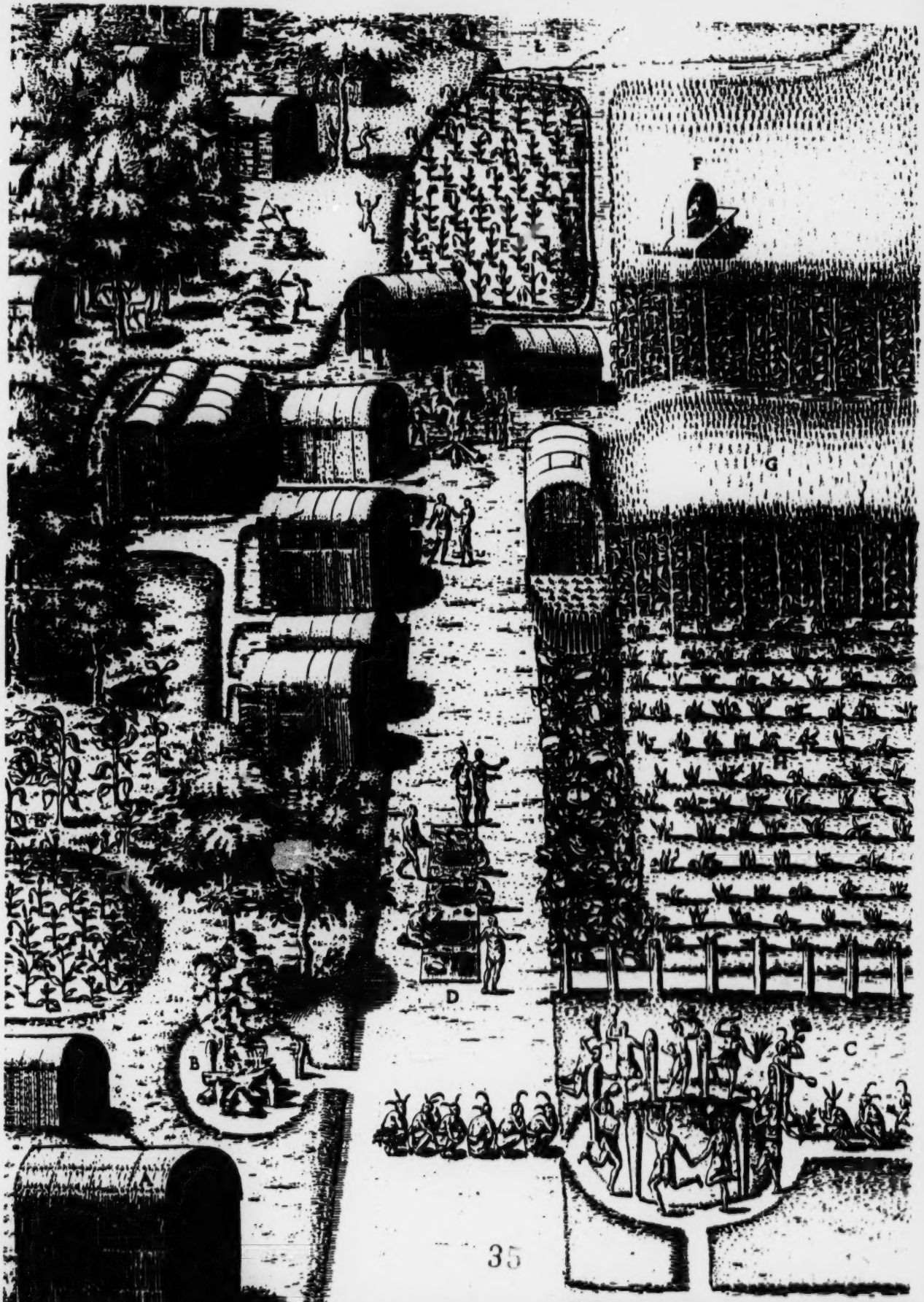

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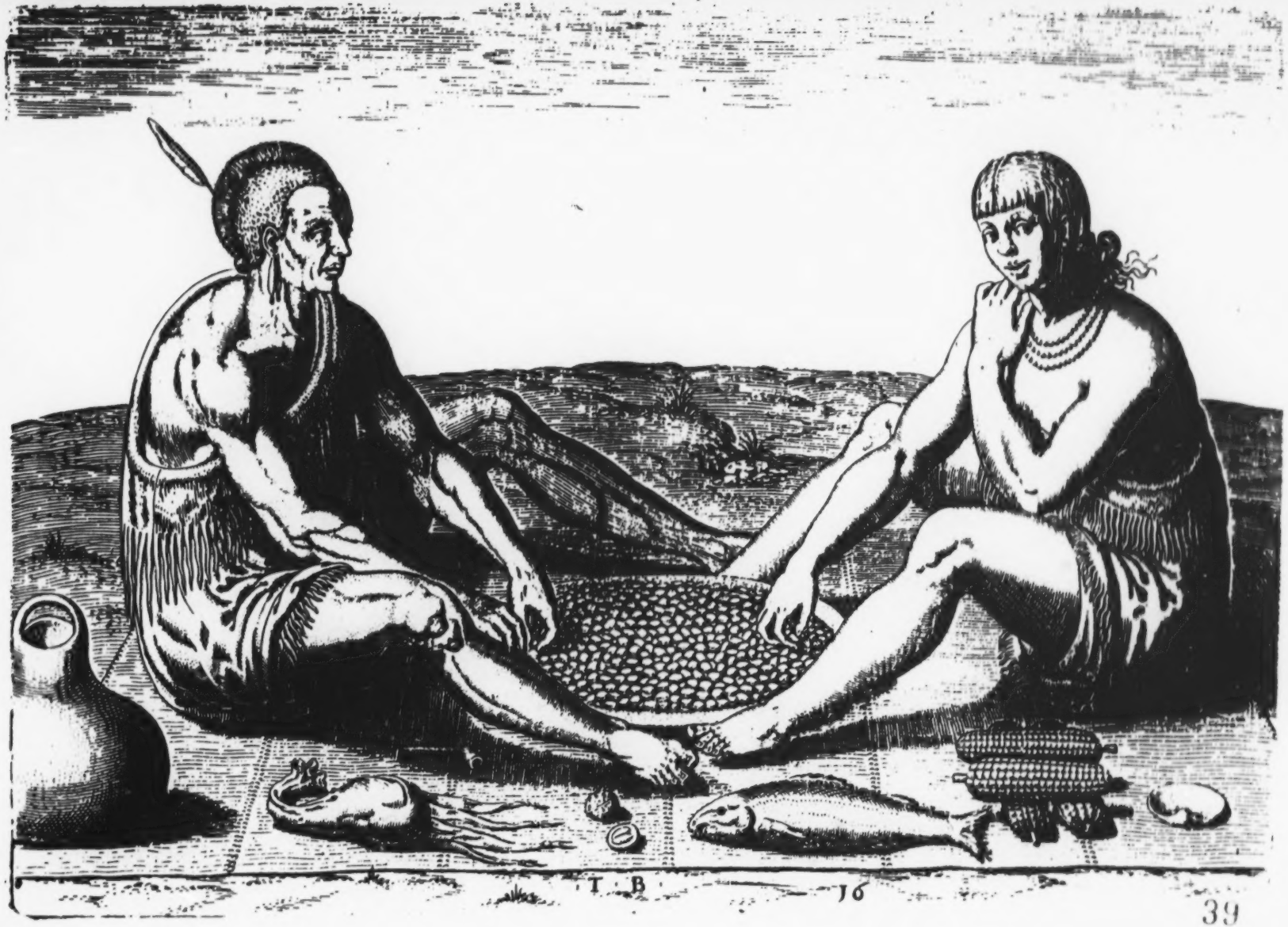
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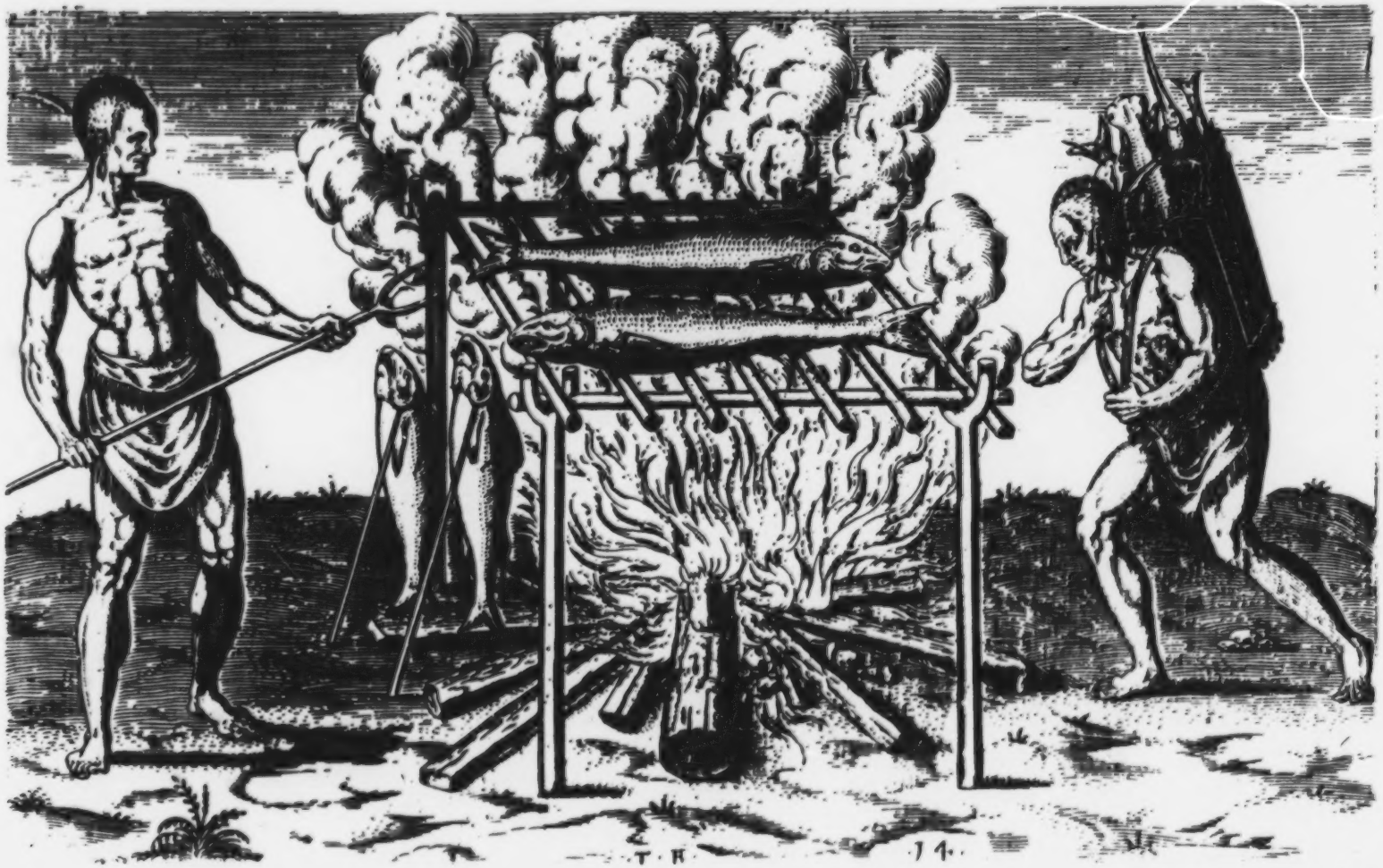

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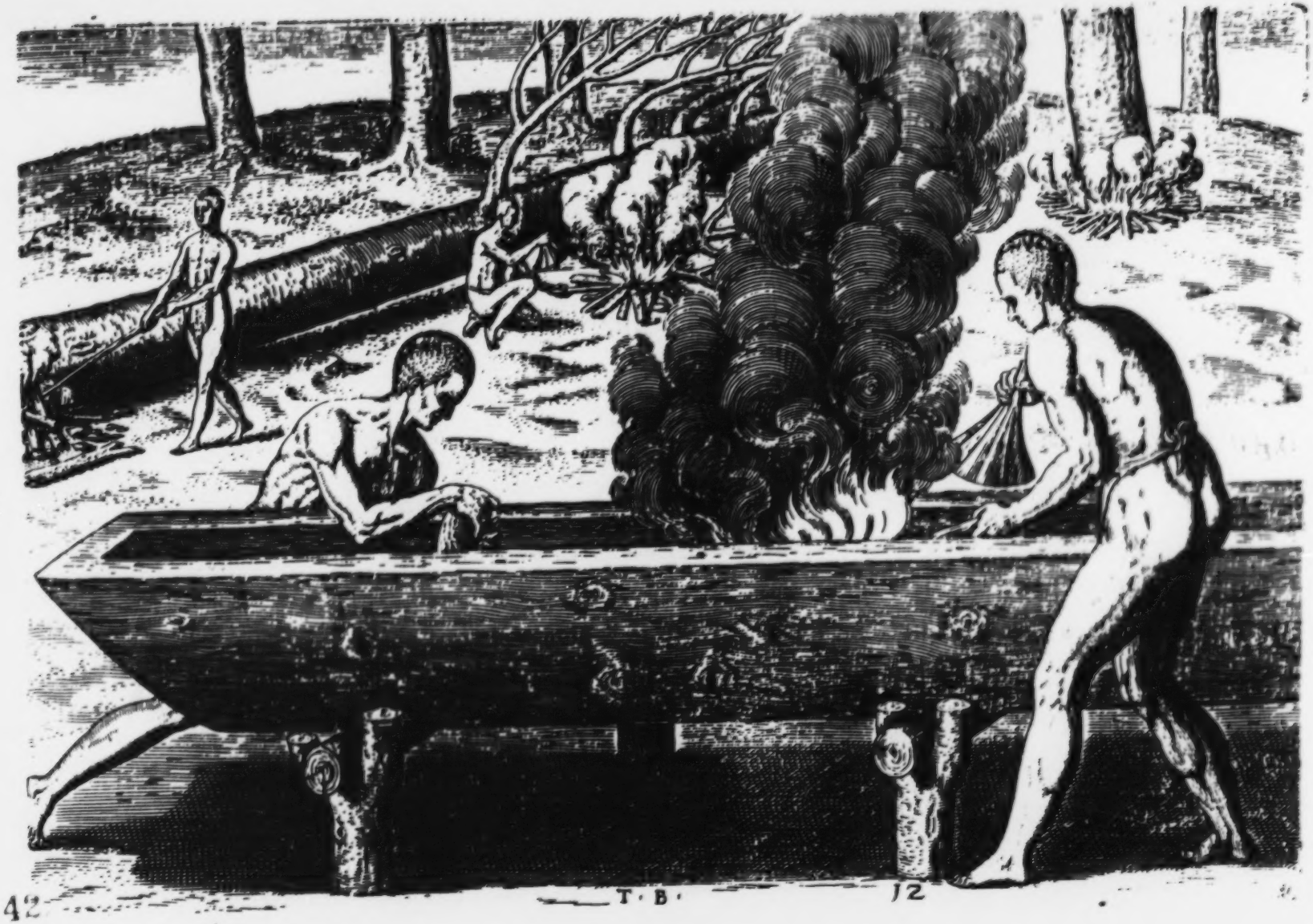

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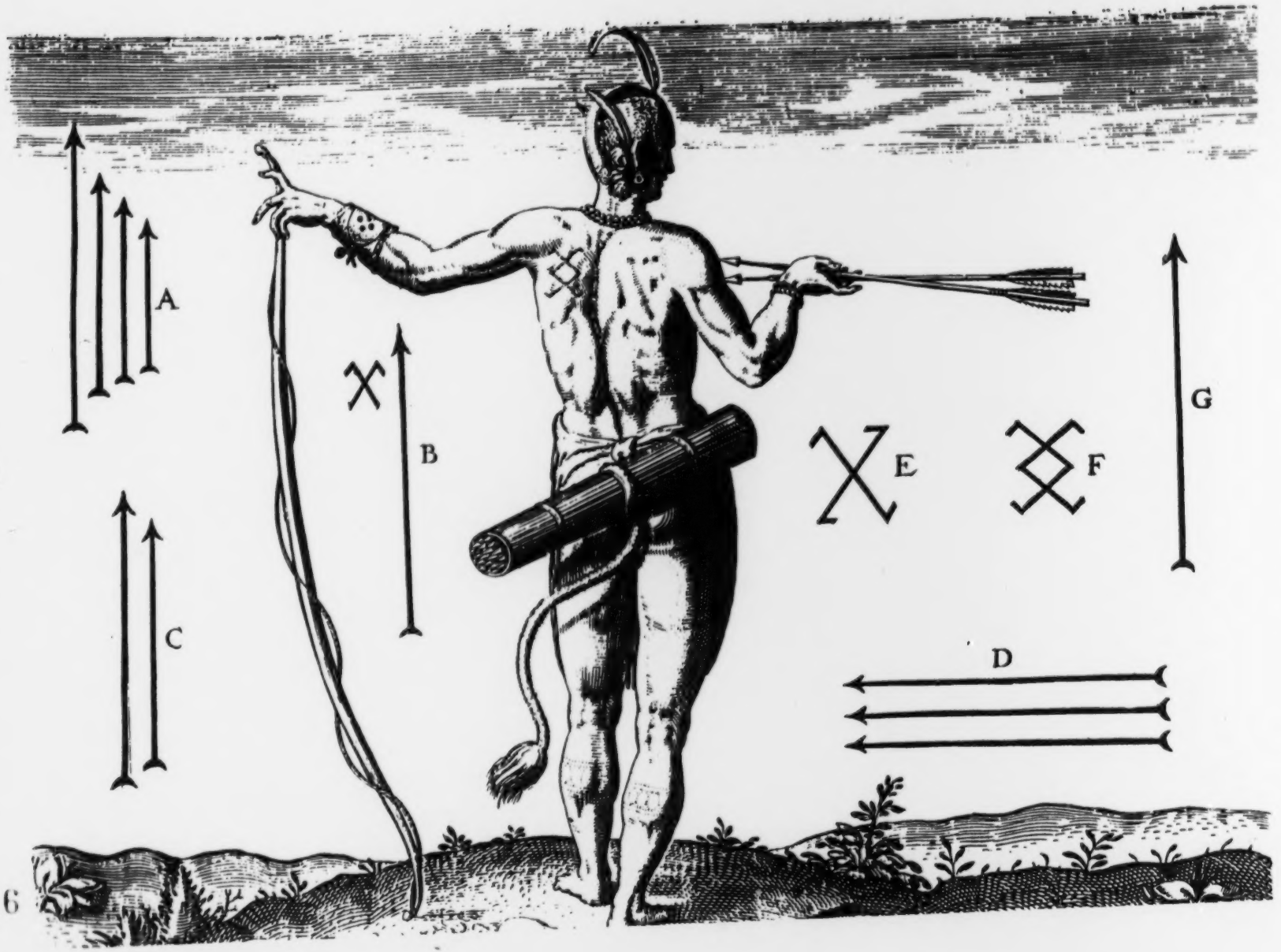
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will be able to test their hypotheses when they go on a visit to Jamestown Settlement. (Credit: *The Intriguing Past*, BLM; Jamestown Settlement.)

Tattle Tale Trash Cans
Activity 2

Divide the class into groups and give each group a paper bag or a small plastic trash can (which can be bought at WalMart, K-Mart, or the Dollar Store) filled with paper trash. The trash may include parts of newspapers or magazines, wrappers around food or toys, grocery store and movie receipts, and ends of shoe boxes--anything that gives type, brand, cost, date, color, age, size information. First ask the students "Is this trash of value to us?" Then, ask the students to see what they can learn about people by looking closely at their trash--making observations and inferences. Finally ask the students "Is trash of value to an archaeologist?"

Money Talks
Activity 3

Analysis of paper money or a coin can be used to show the process of making observation and building inferences. Divide students into groups and give each group a piece of money from a foreign country. Have the students examine the "artifacts" and list observation and inferences about the culture that produced the artifacts.

For example: letters and numbers are shown on the artifact, therefore the culture has a written language and a number system. The artifact shows a picture of a boat, a train, or a building. Therefore inferences may be made about transportation and technology. (Credit: *The Medallion*, Texas Historical Commission.)

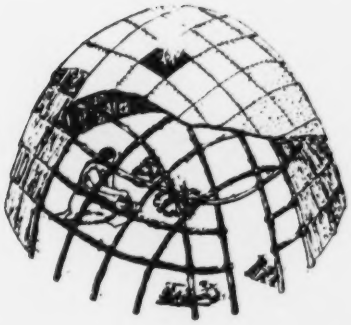
House Stuff
Activity 4

From material culture, archaeologists learn how people lived. Have each student list on a 3X5 card 10 of his or her personal things which would survive a fire (**do not** put names on the cards). Collect and redistribute the cards at random. Ask the students to write a description of the owner whose list they received. (This activity is usually a lot of fun for the students, and humorous, too.) Mention age of the person, likes and dislikes, activities he or she takes part in, and any other observations about the objects listed (what the objects were used for, when they were made). Were some student's cards easier to interpret? If there were more items listed on the card could more be said about the student? Follow this discussion with a look at questions archaeologists ask when finding objects at a site. See how many questions are similar to those the students came up with. (See "Attribute and Classification--Reading an Artifact.") (Credit: *Archaeology Awareness Week*, Texas.)

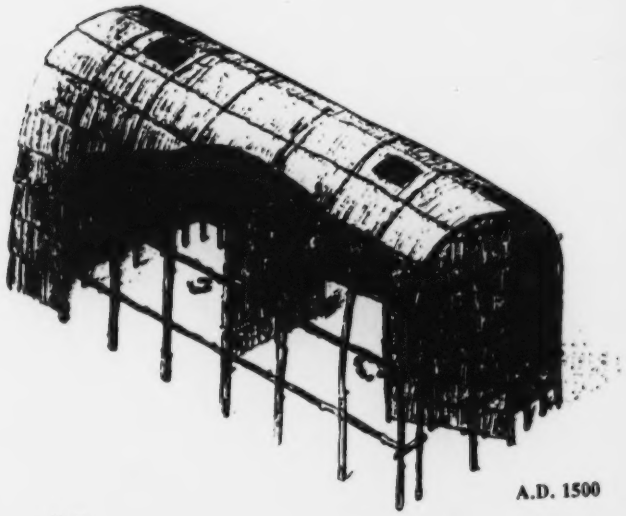
Footprints in Time
Activity 5

Throughout time people have built houses to live in. Archaeologists study the houses of the past to learn about the cultures that built them. By the time an archaeologist excavates a house site, very often the only thing left is its "footprint." This footprint may be a circle of fire-cracked stones, a pattern of round dark discolorations in the soil, or a portion of a brick foundation.

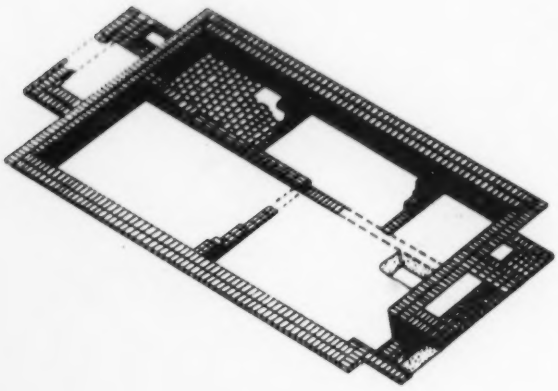
6500 B.C.

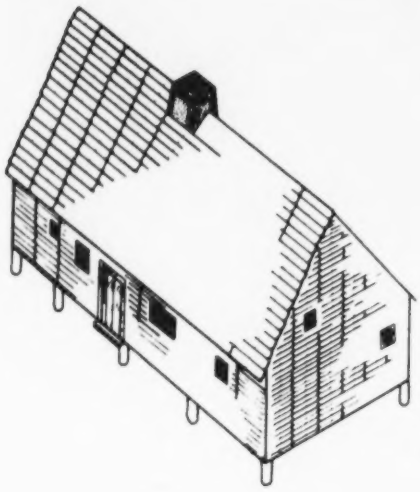


900 B.C.

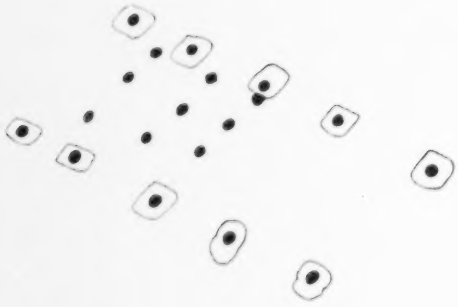


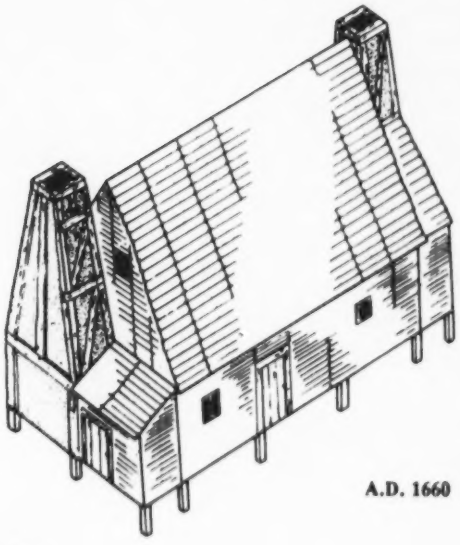
A.D. 1500



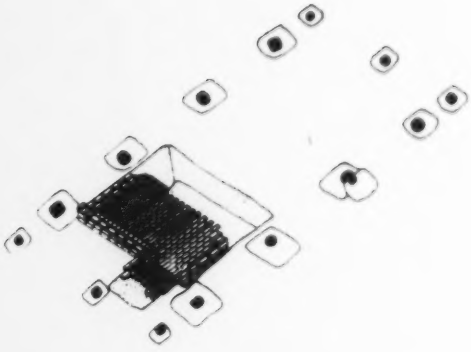


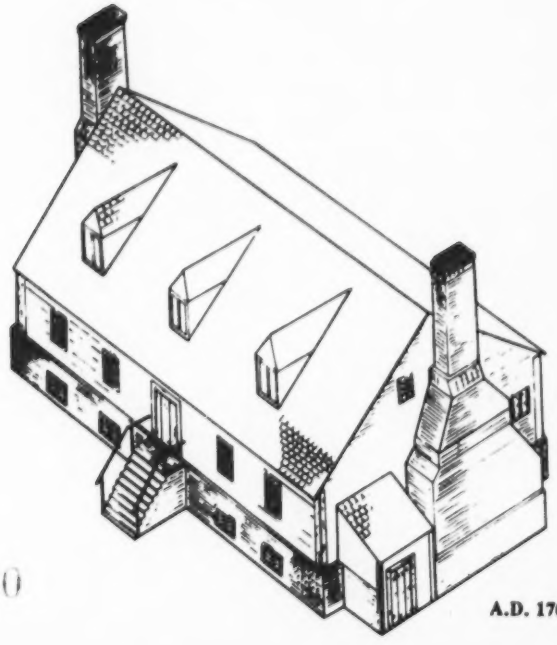
A.D. 1640





A.D. 1660





A.D. 1700

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Learning about houses from their footprints presents many problems. How does one see the footprints? Important clues to the footprints are found in the dirt. As archaeologists study a site, they record not just artifacts, but changes in the soil texture and color. Dark round discolorations in light-colored soil show where Indians put vertical posts in the ground for the wall support of a house. The same approach may be used for the first homes built by the colonists. The only difference was that colonists dug holes with shovels to set their posts, leaving a hole/post footprint.

Archaeologists use other clues besides excavation to find out how houses looked above ground. The first colonists to Virginia described the Indian houses they saw. One explorer to North Carolina painted pictures of Indian longhouses with flat ends. However, all of the Indian longhouses uncovered by archaeologists in Virginia have rounded ends. Early historic records occasionally refer to the appearance of English homes in the colony. Colonial homes started out very modestly--they were nothing more than post barns. As the colony became more established, the settlers incorporated more permanent material, such as brick, and more sophisticated methods of building, into their homes.

Have the students look at the archaeological footprint of Indian and colonial houses (left side of pages 38, 39). Then draw lines connecting each footprint with the appropriate house drawing (right side). Ask the students what details in the ground (fireplace, posts, bricks, doorways, etc.) the archaeologist used as clues to draw the houses. (Credit: *Tellico Archaeology*, Tennessee Valley Authority; Archeological Society of Virginia; and *Kingsmill Plantations 1619-1800*, Academic Press.)

It's in the Garbage
Activity 6

Archaeologists know that answers to questions about people can be found in their garbage--the unwanted remnants of everyday life. A famous anthropologist, Franz Boas, reportedly said "...man never lies to his garbage heap." By studying what people have thrown away, archaeologists can learn a great deal about a culture. This is true not only of prehistoric peoples who left no written record about their lives, but also of people today. One archaeologist studies the garbage of Americans today. He has found that people will often tell an interviewer what they believe is appropriate behavior, but their garbage tells the truth. People frequently say they eat lots of fruit and vegetables, yet their garbage shows they do not.

Garbage heaps, called middens, are a rich source of archaeological information about lifeways of people who lived in the past. Layers of trash also tell a story over time. They are "time capsules" for archaeologists. Archaeologists excavate middens slowly and carefully, recording the location of each artifact and sample recovered.

Collect a few trash cans from various rooms in the school--kindergarten, 5th grade, library, art room, office, etc. Explain to the students that they are archaeologists and will study middens to learn about the people who threw the trash away. First, label the trash cans with their room name. You have preserved their **context**, the relationship artifacts have to each other and the situation in which they occur. Have them remove the trash carefully from top to bottom, arranging the trash in **chronological** order. If you find

dated items, such as newspapers or postmarked envelopes, you can establish a precise date for the trash. Sort the trash into piles based upon some type of similarity (white paper, colored paper, office supplies). This is **classification**. Now the students may infer activities from the various trash cans or from the layers of debris in the trash cans. Would the content of the trash can change if it were placed in a different room? Would the content of the trash can change throughout the year?...as a result of seasonal projects or occasions like birthdays. (Credit: *The Intriguing Past*, BLM.)

PRESERVING THE PAST FOR THE FUTURE

Subjects: Science, social studies, language and communication skills, mathematics.
Skills/Strategies: Reading with understanding for a variety of purposes; developing problem solving skills; addressing ways of analyzing and solving community issues; emphasizing rights and responsibility.
Age Level: Grades 4-12.
Time Required: Two 45-minute class periods.
Materials: Copies of scenario for each group.
Objective: To increase students knowledge about historic and cultural resources. To teach ways to responsibly protect those resources while taking into account diverse needs and concerns of residents in a community.

♦ ♦ ♦

Much of what we know about Virginia's past, archaeologists have learned from sites across the state. When sites are damaged before archaeologists can study them, the information they contain is lost and cannot be replaced.

Sites can be destroyed in two ways: by nature and by people. Bit by bit, natural forces wear down the earth's surface and gradually remove traces of any markings, holes, and material remains. Normally, exposed areas on high or sloping ground are the ones most battered by wind, rain, and water. Rivers and the Atlantic Ocean also slowly erode land. In fact, the average shoreline erosion rate for Virginia is a staggering one foot per year. This process increases during major storms and hurricanes. In some cases, and with foresight and planning, man can mitigate the efforts of nature on important sites.

Very often, people unwittingly destroy sites in the normal course of building houses, roads, lakes, and other construction projects. Even the necessary work of cultivating fields to raise food may affect sites through soil erosion. Since 1607, soil loss in Virginia due to plowing has averaged 5 inches, with some areas losing as much as 2 feet. A survey of an area before any building or farming begins can reveal archaeological sites beneath the surface. If discovered early these can sometimes be incorporated into project plans.

Occasionally, some people also destroy sites on purpose. They often dig for treasure, hoping to discover something of great value. They sell the objects to make money or keep them to build a collection. These people do not understand the importance of the site from which they are taking the artifacts. (See "Pothunters" below.)

Several laws address archaeological sites in Virginia. The federal Archaeological Resource Protection Act (1979) and the Virginia Antiquities Act (1977) prohibit removing without a permit all cultural resources on federal or state property. The Virginia Cave Act (1979) bars excavation without a permit within all caves and rockshelters. State burial laws prohibit removing without a permit or court order all human burials, regardless of age or cultural affiliation. The Underwater Historic Properties Act (1979) requires a permit to recover historic objects from shipwrecks or other submerged sites.

The National Historic Preservation Act

(1966) requires that federally funded, assisted, or permitted projects be reviewed by archaeologists to consider their impact on important archaeological sites. Often this review results in the excavation of a site before construction, or altering the project plans to miss the site.

Including archaeological sites on the Virginia Landmarks Register and on the National Register of Historic Places encourages public and private care for these sites. These two registers do not regulate property owners, but they do encourage preservation of sites by calling attention to their special significance. Property owners wishing to provide for the permanent protection of significant sites can do so by granting a protective easement to the state or to some other appropriate organization.

To become involved in archaeology, here are some things you can do:

1. **Don't dig.** Each site is a page in the story of Virginia's past. Digging for any reason destroys the context of a site. If the site is skillfully excavated by a qualified archaeologist, that page can be read, recorded, and retold. Without this care, both the site and its story are gone forever; the recovered artifacts may look interesting, but their true meaning will be gone forever.

2. **Volunteer to work on a site or in a lab.** Many archaeological projects welcome volunteer help, especially to process artifacts in the laboratory. Make sure that the project you choose is one that meets state and federal standards. The Department of Historic Resources maintains information on some of the projects that welcome volunteers. Staff will provide a telephone number of individual sponsors that you can contact.

3. **Learn how to identify and report sites.** We can't make intelligent decisions about sites or study them unless we know where they are. The Department of Historic Resources keeps a list of all Virginia sites. These lists can be used by researchers and by people making decisions about building roads and other developments. Both the Department and the Archeological Society of Virginia can help you report sites.

4. **Participate in government process:** Local governments and state and federal agencies own property and make decisions about zoning, permits, construction, highways, and similar activities that may affect archaeological sites. Citizens can join in decisions made about these properties at public meetings or by writing a letter. Call your local government or the appropriate agency to learn about procedures for letting decision makers know what you think. This would also be a good project for a history or civics class as a way to learn how local governments make decisions.

5. **Join the Archeological Society of Virginia.** This statewide organization is made up of people who want to learn about Virginia's history and prehistory by studying and protecting archaeological sites. The society publishes a newsletter and a *Quarterly Bulletin* with reports on archaeological sites and issues, and it sponsors many events each year. There may be a local chapter in your area.

6. **Organize a Virginia Archaeology Month event in your community.** Show the role that archaeology plays in

such diverse areas as education, and in understanding regional and local heritage. This annual statewide event includes special tours, hands-on excavations with experts, exhibits of new archaeological discoveries, lectures by noted archaeologists, and family fun.

Ask a local museum, library, school, historical society, or other organization to sponsor an exhibit, lecture, or other event. The Department of Historic Resources, the Archeological Society of Virginia, or the Council of Virginia Archaeologists can help you develop ideas and find speakers. They can also supply posters and other information to use at the event.

7. **Read.** The more you know about what can be learned through careful archaeological study and analysis, the better you can tell others about archaeology. Both the Department of Historic Resources and the Archeological Society of Virginia publish books and reports about Virginia archaeology. Public and college libraries are good sources for both books and magazines about archaeology. You can also find *Archaeology* magazine in many bookstores.

The "Pothunter" and the Archaeologist: What's the Difference?
Activity 1

A pothunter is a term applied to a person who digs for treasure. A pothunter sells the objects to make money or keeps them to build a collection. Pothunters place little importance on the site from which they are taking the artifacts. While they dig for treasure, they destroy, the real find--clues to unveil the mysteries of our shared past. (A collector appreciates the object and its history. He usually collects objects solely from the surface of the ground.) The following lists show what archaeologists learned from excavating a site in the Roanoke area and what a pothunter would have learned from excavating the same site.

What trained archaeologists learned:

1. The Indians who lived at the site made pottery, hunted with bows and arrows, and buried objects with their dead.

2. The site was inhabited off and on from 8,000 B.C. until A.D. 1200 when the Indians built a palisaded village 300' in diameter.

3. They lived in dome-shaped houses about 20' in diameter, made from bent saplings and covered with woven mats.

4. Personal items and foodstuffs were stored in below ground cellars inside their homes.

5. Fireplaces in the center of their homes provided warmth and a place to cook food, as did fireplaces behind their homes.

6. A very large rectangular structure served as a town house for secular and sacred assemblies.

What pothunters learned:

1. The Indians who lived at the site made pottery, hunted with bows and arrows, and buried objects with their dead.

7. The center of the village was left open as a common area for games and dancing.

8. Corn, beans and squash were grown in fields surrounding the village.

9. A variety of nuts and fleshy fruits were gathered seasonally.

10. The Indians relied heavily on deer for its meat and hide. Deer bones and antlers were made into awls, fishhooks, hairpins, points, and scrapers.

11. The people closely interacted with people from Tennessee.

12. The Indians had an extensive trade network with people living along the coast.

13. The Indians buried their dead behind their homes, inside the palisade.

14. Burial practices differed according to social status. Religious leaders were buried with ceremonial objects, craftsmen with their tools, and children with personal items, such as shell beads and gorgets.

15. The highest death rate occurred between infancy and 2 years of age. Many adults lived beyond 45 years.

16. Most of the Indians suffered from osteoarthritis, many from dental caries, and some from physical trauma and infectious diseases.

Stewardship of Cultural Resources
Activity 2

How are significant sites and artifacts to be conserved and used in a world that is continually changing? Many archaeological issues revolve around this question. In the scenario that follows, students can examine the situations created by seemingly competing interests. There are no right or wrong answers to the discussion questions; it is analytical process that is critical for learning. It is important to give students the opportunity to synthesize the process skills they developed through the exercises in this booklet and their knowledge of their cultural heritage.

New Lake Dam

The following scenario illustrates some of the kinds of factors that archaeologists, elected officials and citizens may have to consider in trying to balance financial, social, environmental, and historic preservation issues in real life decision making. The "case" itself is hypothetical, but draws on issues and concerns that are often raised. Following the scenario are some suggested questions to help stimulate an understanding and analysis of the issues involved. There are no "correct" answers.

An outlying rural/suburban community still enjoys some of the open fields, woodlands, and working farms that it has had for the past 200 years. Like many other communities, however, it has experienced the pressures of an increased population and the budgeting burdens that come with being a "bedroom" community. People have moved out from the nearby city. People have come from other parts of the country.

As the community has grown, it has become increasingly apparent to its leaders that the wells and small reservoir now in use are already stretched to their capacity. Water levels in the reservoir become very low in the summer months already. In recent dry periods, the local government has had to ask its citizens to restrict their water use. They are looking seriously for a place to build a dam and a new reservoir that will give people now and in the future enough water to drink, for cooking, for cleaning and to maintain lawns and gardens. The following scenario outlines some of the options they have found, and the choices that they must make.

Here are some things they think are important to keep in mind:

- Wetlands and natural habitat;
- Historic places including archaeological sites;
- Citizen and land owner interests;
- Costs.

Note to the teacher: Before moving on to the location descriptions, have your class discuss the above issues. What kinds of things do they represent and why would they be important to the community?

Location 1. Costs the least. No one lives here. Lowlying land along the river is broad and flooding will produce a large reservoir without displacing any people. Just below this broad floodplain the river narrows so it will be easy to build a dam. There are no historic buildings. the area has never been surveyed for archaeological sites so no one knows if there are any important sites underground. Most of the lowlying areas are now wetlands. It is a major resting place for migratory birds and currently has two active eagles' nests.

Location 2. Costs the most by far. An abandoned quarry several miles from the river would make a large and deep reservoir. Getting water from the river and getting overflow back out to the river would require building and maintaining not only a dam, but also extensive pipelines and pumping systems to and from the quarry site. The pipes would require rights of way across 10 peoples land, but would not require that they move from their homes. The quarry itself has local historical significance since it was the source of stone for building the courthouse and several local factories in the late 19th century. It is also a favorite place for picnics and

swimming. Most of the land between the river and the quarry is already in farmland and is not considered a major wildlife habitat. There are no wetlands on this location.

Location 3. A broad, wide flood plain just above a narrow section of river would allow for a dam to be built. The flood plain is used for crops, but no one lives there. There are no wetlands. The area does contain several rare and significant archaeological sites. Just at the point where the dam is proposed is an Indian "platform mound." It is the only mound of this type in Virginia, and represents the northeastern boundary of the ancient Mississippian cultures and ancestors of the Cherokee Indians. A little way up river from the mound, archaeologists have discovered the remains of the village where the people who built the mound lived. It is one of the largest villages of this time period found in Virginia. There are known to be remains of Indian houses, trash and storage pits, and burials scattered throughout this village. Along the edge of the flood plain where the ground rises and is rockier, there is a small rockshelter with several pictographs or ancient Indian paintings. There are only two other pictograph sites recorded in Virginia. Building the dam and reservoir at this location will cost only a little bit more than at Location 1.

Location 4. Another wide flood plain is the location of Smithtown. This African American community includes farms, houses, a store, and a church. There is an abandoned building that used to be a school. Many of the same families have lived in this community since 1870 when Josiah Smith donated land for the church. Building a dam just downstream would flood the entire community and force 30 families to move. There has been no archaeological survey of the area. There are no wetlands. Building the dam and reservoir will cost about the same as Location 1 or 3, but costs of buying the land and relocating this many families will drive the cost up. It would still cost much less than Location 2.

How do you pick the best location to build the dam and reservoir?

Discussion questions: These can be done individually, in small groups or as a class.

1. Rank the locations on a scale of 1-4 for each of the 4 factors being considered. Use 1 for the lowest score and 4 for the highest. Why did you give each one the score you chose?

For example: The least expensive would get a "1" and the most expensive a "4". The location that would have the least impact on the environment (or landowners or historic places) would get a "1" and the location that would have the most impact on the environment (or landowners or historic places) would get a "4".

2. Compare the different rankings. Did any location get all "4s"? Did any location get all "1s"? Which locations did you give the most "3s" and "4s" and the least "1s"? Does one location stand out as the best or worst place to build the dam using this method of scoring? If so, are there any problems still outstanding about even the "best" choice? If you weigh all of the four factors equally can you find a location that addresses all the issues given -- wetlands, historic places, landowner interests, and cost?

3. Take each of the locations in turn. Have the class discuss the implications of that choice. What would be the positive outcomes? What conflicts might arise?

4. Are there ways to resolve some of those conflicting interests?

For questions 3 and 4, here is some additional information to stimulate discussion of different options.

Covering a buried archaeological site with water won't destroy it. Once the water level is stable so that the surface isn't being eroded, the water will help protect it. But people can no longer study the site once it is under water, so sometimes archaeologists recommend "testing" a site or partially excavating it before it is flooded. This testing would increase the cost of the project.

A site that will be completely destroyed can be excavated partially or completely and the information used for research and educational purposes. Such excavation does save part of the information that could be learned from a site but not all of it. It also increases the cost of the overall project.

A historic building would be destroyed by the lake, but could be moved. If it is moved, it loses some but not all of its historic importance, because it is no longer in the same place.

In location #3 the construction of the dam would destroy the platform mound. The valley is narrow enough at that point, however, that a longer, larger dam could be built just upstream of the mound. Because it would be longer and larger, the dam would cost more, but still less than the costs for location #2. It would also destroy part of the village site.

Native Americans feel very strongly that "Indian Burial Grounds" should be left alone and given the same respect that modern cemeteries are given. None of Virginia's eight current tribes are located in the county. An out-of-state Native American group claims that their ancestors built the mound and lived in the village at location #3. There are no documents to prove this. The archaeological evidence is inconclusive. The out-of-state group insists that "their burials" in the project area be protected.

5. How do the additional factors just given affect the communities decisions and possible choices? Have your class discuss these and other factors that might make one or the other locations work better than it first appears.

(Hints: Could any of the archaeological sites be used as educational and tourist attractions? Would there be any economic benefits in doing that? Could the project be designed in a way to include new wetlands to offset the loss of existing wetlands? If the county allowed boating on the new reservoir, would this increase the property values around the edges of the new lake and make it more attractive in one place or another?)

SUGGESTED READINGS

These books, which focus on Virginia, are just a few of the many books an archaeology available for children and adults in most libraries.

Indian of Virginia

America 1585: The Complete Drawings of John White
1984 Paul Hulton. The University of North Carolina Press, Chapel Hill.

The Cherokee
1989 Theda Perdue. In Indians of North America, Frank W. Porter, III, editor. Chelsea House Publishers, New York & Philadelphia.

Indians New World
1989 James Merrill. University of North Carolina Press, Chapel Hill.

Pocahontas' People: The Powhatan Indians of Virginia Through Four Centuries
1990 Helen Rountree. University of Oklahoma Press, Norman.

Powhatan Indians
1990 Christian F. Feest. In Indians of North American, Frank W. Porter, III, editor. Chelsea House Publishers, New York & Philadelphia.

The Powhatan Indians of Virginia.
1989 Helen Rountree. University of Oklahoma Press, Norman.

Indian Archaeology

Archaeological Resources for the Classroom: A Guide for Virginia Teachers
1992 Archeological Society of Virginia.

The Archaeology of Southwest Virginia
1992 The Archeological Society of Virginia, Roanoke Chapter, 2728 Colonial Avenue, Suite 102, Roanoke, VA. (703) 345-9930.

First People: The Early Indians of Virginia
1992 Keith Egloff and Deborah Woodward. University Press of Virginia, Charlottesville.

Lost Arrowheads and Broken Pottery: Traces of Indians in the Shenandoah Valley
1986 William Gardner. Thunderbird Museum Publication, Tru Tone Press, Manassas, VA.

Historic Archaeology

Archaeology: Digging Up History
1983 *Cobblestone: The History Magazine for Young People*. Cobblestone Publishing, 7 School Street, Peterborough, NH 03458. (603)924-7209.

A Guide to Artifacts of Colonial America
1970 Ivor Noel Hume. Alfred A. Knopf, New York.

Historical Archaeology
1969 Ivor Noel Hume. Alfred A. Knopf, New York.

In Small Things Forgotten
1977 James Deetz. Anchor Press, Doubleday, New York.

The Archeological Society of Virginia publishes a *Quarterly Bulletin* and special publications. The publications are filled with information about prehistoric and historic archaeology in Virginia, as well as articles about Virginia Indians.

RESOURCE MATERIALS

"Virginia Indians, an Educational Coloring Book," 24 pages, ages 8-12. Available from the Virginia Museum of Natural History. Groups orders at a discount.

Mailing address:

The Virginia Museum of Natural History
1001 Douglas Avenue
Martinsville, VA 24112
(703) 666-8631

"Living With the Indians," and **"Cultures in Contact,"** two educational Teacher's Guides from the Jamestown Settlement. These guides are provided only for before-and-after classroom activities all focused around a trip to Jamestown. Or, a speaker will come to the classroom upon request. "Living With the Indians" provides students with an overview of Powhatan Indian culture as it existed in the early 17th century. "Cultures in Contact" compares and contrasts the Powhatan Indian and European cultures which met at Jamestown in the 1600s. This unit can be combined with a visit to Jamestown Settlement.

For further information, contact:

Dorsey Bodeman, Education Supervisor
Jamestown Settlement
P.O. Drawer JF
Williamsburg, VA 23817
(804) 253-4949

First People: The Early Indians of Virginia, by Keith Egloff and Deborah Woodward, Department of Historic Resources. This 72-page award-winning book examines the life of Virginia Indians from 9,500 B.C. to the present. It looks at how the early Indians adapted to a constantly changing environment, up to the time of European contact. It also explores issues the tribes dealt with afterward, through the 1800s to the present.

To order, contact:

Mary Kathryn Hassett
University Press of Virginia
Box 3608 University Station
Charlottesville, VA 22903
(804) 924-3468

The Archaeology Teaching Trunk shows what we have learned about Virginia's Indians through research. Filled with books, magazines, a video an archaeology, an archaeology game and hands-on artifacts reproductions children enjoy. Free; available within the Roanoke Valley region.

Available from:

Tom Klatka
Roanoke Regional Office
Virginia Department of Historic Resources
1030 Penmar Avenue, SE
Roanoke, VA 24013
(703) 857-7585

"The Archaeology of Southwest Virginia," an 18-page booklet published by the Archeological Society of Virginia, Roanoke Chapter. This booklet is available to educators free of charge; cost is $1.50 for other individuals. Requests for specific quantities should be made to:

Daniel Vogt
Roanoke Chapter ASV
2728 Colonial Avenue, Suite 102
Roanoke, VA 24015
(703) 345-9930

"Virginia Indian Kit" is designed for third and fourth grade teachers who are studying Virginia history with their students. The kit contains replicas, background information, suggested readings and a teacher's guide. The Monacan Indians of the central piedmont are highlighted in the kit. For information and reservation contact:

Eileen Merritt
Virginia Museum of Natural History
Clark Hall
Charlottesville, VA 22903
(804) 982-2780

Museums

Jamestown Settlement
P.O. Drawer JF
Williamsburg, VA 23817
(804) 253-1607

Jamestown Settlement offers a unique step back in time to the year 1607 through it's three galleries "Old World," "Indian," and "New World," and through its outdoor costume interpretation of an Indian village, Jamestown, and sailing ships.

Pamunkey Indian Reservation
Route 1, Box 787
King William, VA 23086
(804) 843-4792

The Pamunkey Indian Reservation has a museum and pottery guild which actively continues the traditions of the tribe from one generation to the next. The reservation welcomes students for special tours.

Flowerdew Hundred
1617 Flowerdew Hundred Road
Hopewell, VA 23860
(804) 541-8897

Flowerdew has a museum, rebuilt windmill, and ca. 1820 kitchen, and offers a hands-on program doing archaeology for preschool through college ages.

Jamestown Archaeology
School Group Coordinator
Colonial National Historic Park
Box 210
Yorktown, Va 23690
(804) 898-3400

Jamestown Island has exhibits, a hands-on archaeology program for 6th grade through college ages, and a walking tour of the archaeological sites. Reservations are required.

Valentine Museum
1015 East Clay Street
Richmond, VA 23219
(804) 649-0711

Valentine Museum offers an outreach program for grades K-5 on Powhatan Indians. Includes the demonstration and handling of replicated artifacts. Reservations required.

The Virginia Museum of Natural History
1001 Douglas Avenue
Martinsville, VA 24112
(703) 666-8600

The Virginia Museum of Natural History current exhibits include, "The Dan River People: Ancient Virginians and Their Environment." The museum offers: 1) a program on Native Americans of Virginia, exploring how they met their basic needs for tools, food, and shelter, and 2) an illustrated ***"Virginia Nature Notes"*** on Native Americans in Virginia. Free to teachers.

Virginia Marine Science Museum
717 General Booth Boulevard
Virginia Beach, VA 23451
(804) 437-4949

Virginia Marine Science Museum has a Native American exhibit area and offers an outreach program on the local Chesapeake Indians with costume interpreters and replicated Indian artifacts.

Winthrop Rockefeller Archaeology Museum
School & Group Services
Colonial Williamsburg Foundation
Williamsburg, VA 23187
(804) 220-7770

The Winthrop Rockefeller Archaeology Museum, at Carter's Grove, tells the story with artifacts and pictures of archaeological sleuthing at Wolstenholmtown--an early 1600's Virginia Company settlement.

Colonial Williamsburg's Department of Archaeological Research offers programs and field schools in historical archaeology. Call Staff Archaeologist (804) 220-7334.

Virginia Historical Society
Education Programs
P.O. Box 7311
Richmond, VA 23221
(804) 342-9684

The Virginia Historical Society has offered a wide array of special programs and temporary exhibits on Indians of Virginia. Soon a permanent exhibit will open on Virginia history which will include a section on Native Americans. Call ahead to see what is currently available.

Historic Crab Orchard Museum & Pioneer Park
P.O. Box 12
Tazewell, VA 24551
(703) 988-6755

Exhibit of artifacts excavated from the village site across the road and has a small diorama of the 400-foot diameter Late Woodland Indian village.

SPEAKERS DIRECTORY

The following list of speakers, experts on archaeology and Virginia's Native American tribes, are available to come into your school or classroom. With hands-on materials, personal accounts, countless stories, they will stir your students' imagination and change their thinking about the way things are versus the way we assume them to be. They will dispel old myths, and replace them with new insights. They will show how our understanding of the past continually changes as we learn more and more.

1. **Department of Historic Resources**
   221 Governor Street
   Richmond, VA 23219
   (804) 786-3143

The Department houses the largest collection of artifacts in Virginia, dating from the 9,500 B.C. to the 19th century. Speakers can bring examples to show your students and talk about how archaeologists discover and excavate sites and why these sites are so important.

Roanoke Regional Preservation Office
1030 Penmar Ave., SE
Roanoke, VA 24013
(703) 857-7585

Winchester Regional Office
104 N. Braddock Street
Winchester, VA 22601
(504) 722-3427

Staff in the regional offices are eager to meet with students in the classroom and at excavated sites.

2. **Archeological Society of Virginia**

There are chapters in these areas of the state (**note** - Presidents change each year, so please call the Department at **786-3143** for an up-to-date contact and telephone number):

Fredericksburg Area Chapter
Greater Richmond Chapter
Greater Williamsburg Area Chapter
Massanutten Chapter
Nansemond Chapter
New River Valley Chapter
Northern Virginia Chapter
Reed Creek Chapter
Roanoke Chapter
Roanoke River Chapter
Thomas Jefferson Chapter
Upper New River Chapter
Wolf Hills Chapter

3. **Native American Speakers**

Shirley Custalow McGowan, "Little Dove"
Mattaponi Indian Reservation
Rt. 2, Box 220
West Point, VA 23181
(804) 769-3930

Daughter of Chief Webster Custalow, Shirley McGowan has been speaking about Virginia Indian traditions and lifestyles for the past 26 years. A gifted speaker, she can show your students, with actual examples,

how the Mattaponi cooked food, made clay pots, built shelters, made all their materials and tools for survival, and other skills necessary to live in harmony with nature.

United Indians of Virginia, Speakers Bureau

Juanita Smith
5713 Bondsor Lane
Richmond, VA 23225
(804) 232-0248

The United Indians of Virginia is a council of eight tribes working by consensus on issues within the Native American community. Tribal leaders and elders regularly visit the public schools to give talks about Virginia Indian cultures then and now.

4. **Universities**

Archaeology Research Center
Virginia Commonwealth University
Richmond, VA 23284
(804) 828-7596

Department of Anthropology
College of William & Mary
Williamsburg, VA 23185
(804) 221-1055

Center for Archaeological Research
College of William & Mary
P.O. Box 8795
Williamsburg, VA 23187
(804) 221-2584

Department of Anthropology
University of Virginia
Charlottesville, VA 22903
(804) 924-7044

Laboratory of Archaeology
Washington & Lee University
Lexington, VA 24450
(703) 463-8574

Department of Sociology & Anthropology
James Madison University
Harrisonburg, VA 22807
(804) 568-6171

Department of Sociology & Anthropology
Radford University
Radford, VA 24142
(703) 831-5615

Department of Sociology & Criminal Justice
Old Dominion University
Norfolk, VA 23508
(804) 683-3791

Department of Historic Preservation
Mary Washington College
1301 College Avenue
Fredericksburg, VA 22401-5358
(703) 899-4067

5. **Other Archaeology Speaker Resources**

Alexandria Archaeology
105 North Union Street
Alexandria, VA 22314
(703) 838-4399

Department of Archaeological Research
Colonial Williamsburg Foundation
P.O. Box 1776
Williamsburg, VA 23187-1776
(804) 220-7331

George Washington National Forest
101 North Main Street, Harrison Plaza
P.O. Box 233
Harrisonburg, VA 22801
(703) 433-2491

Heritage Resources Branch
Fairfax County Government
2855 Annadale Road
Falls Church, VA 22042
(703) 237-4881

Jefferson National Forest
210 Franklin Rd., SW
Roanoke, VA 24001
(703) 265-6058

Monticello Archaeology Department
Thomas Jefferson Memorial Foundation
Rt. 53
P.O. Box 316
Charlottesville, VA 22902
(804) 296-5245

Montpelier Archaeology Research Center
P.O. Box 454
Montpelier Station, VA 22957
(703) 672-0008

Mount Vernon Archaeology Department
Mount Vernon, VA 22121
(703) 780-2000 Ext. 326 W

Poplar Forest Archaeology Department
P.O. Box 419
Forest, VA 24551
(804) 525-1806

Thunderbird Archaeological Associates
126 East High Street
Woodstock, VA 22664
(703) 459-4017

Educational Consultants
Michael V. Taylor
1614 Skiffes Creek Circle
Williamsburg, VA 23185
(804) 888-2561

Educational Consultants offer programs for schools, museums and special events concerning archaeology and Indians of Virginia. Replicated artifact kits allow students to see Indian tools being used.

SHARE YOUR ACTIVITY IDEAS

The Virginia Department of Historic Resources plans on distributing a booklet of classroom activity ideas each year related to the theme of Virginia Archaeology Month and to the archaeology of Virginia, and we need your help. Let us know which lessons you have used from this booklet and found to be successful or not successful. Please complete the evaluation and send it back to us. Add a brief description of any new activity you and your students have enjoyed. All new suggestions that are published will be credited to the submitting individual or institution.

Thank you! We like hearing from you.

1. Which activities from the **Teacher's Guide** have you used in your classroom?

_____

_____

2. Did the activities relate to subjects taught in your classroom and to the Standards of Learning?

_____ Yes _____ No

Comments:_____

_____

3. Did your students find the activities and discussions engaging and challenging? Please identify which ones in particular.

_____

_____

4. Did you find the activities easy to use in the classroom? Please identify which ones.

_____

_____

5. Did you use any outside resources recommended in the **Teacher's Guide**? Which ones?

_____

_____

6. Other comments:

Please return to:

The Teacher's Guide
Virginia Department of History Resources
221 Governor Street
Richmond, Va 23219

NOTES

The Virginia Department of Historic Resources, in accordance with the Americans with Disabilities Act, will make this publication available in braille, large print or audiotape upon request. Please allow 2-4 weeks for delivery.